Cost and Management

Incorporated in 1920 and published monthly by the
SOCIETY OF INDUSTRIAL AND COST ACCOUNTANTS OF CANADA

Editorial and business offices:
31 Walnut Street South, Hamilton, Ontario

Editor: J. W. ROSS *Assistant Editor:* J. M. PARKER

Subscription price to non-members, $5.00 per year
Single copies, 50 cents. Members desiring five copies or more of a single issue, may obtain them at 25 cents each.

Opinions expressed by articles and comments are not necessarily endorsed by the Society.

Authorized as second class mail, Post Office Department, Ottawa.

Return postage guaranteed.

Editorial Comment . . .

The Budget

This year's budget will be of more than usual significance to the industrial accountant.

There were few important changes to the taxing acts and tax rates remain unchanged. With the exception of the repeal of Excise taxes on automobiles (7½%), which was intended to stimulate the automotive industry, the important factors are economic measures directed at the stimulation and expansion of our economy. The stated purposes of the budget were to encourage expansion of our economy and to stimulate exports and decrease imports or, in other words, to overcome our balance of payments deficit.

Specific objectives of the government aimed at achieving these purposes are a reduction of the value of the Canadian dollar externally, reduction of the level of interest rates internally and encouragement of investment by Canadians. Coupled with a budgeted deficit and expansion of investment by the Industrial Development Bank, a number of economic factors will come into play, some of which may counteract others. For example, low interest rates will tend to discourage domestic savings and investment. Deficit financing usually indicates increased borrowing which tends to force interest rates up unless the money supply is increased which, in turn, tends to attract inflow of foreign capital. The inflow of foreign investment plus high interest rates have been the factors forcing up the Canadian dollar. A lower Canadian dollar is expected to make Canadian goods more competitive on world markets and increase the profit margins for industries already enjoying international trade, thus encouraging expansion in those industries. Goods whose prices are established by world markets (e.g. metals, wheat, wool, cotton) should increase in value domestically.

Significant barometers in the government's attempts to carry out its budget intentions will be domestic interest rates and the value of the Canadian dollar on the

international money market. Both these factors may be compared to the operation of a spring; as they are forced one way or the other, the forces working against this pressure increase in strength. After the budget announcement, there was an immediate drop in the value of our dollar. The major factor was psychological and this may be only a temporary influence.

Industrial accountants may expect to see price rises in certain raw materials; their companies may be looking into the export market and therefore marginal costs may play a more prominent part in company planning. Above all, we hope most of us will be concerned with assisting with plans for our companies' expansions.

"FACT AND OPINION"

Canadian Tax Journal, November-December, 1960

Now, when we face serious unemployment and are burdened with an undoubtedly heavy tax load, it is perhaps natural that thoughts have again turned to using the tax system for economic stimulus. Almost daily new ideas are advanced—and the present writer is not among the innocent in this regard. Perhaps some changes can be introduced to effect minor shifts in the tax burden to encourage an industry or region or to stimulate consumer spending, but all these are mere trimming and snipping. The indisputable and apparently unchangeable fact is that as a result of the adoption of a new philosophy of government in the last decade we have now assumed a burden of public expenditure which requires maintaining taxes at a high level. This development in the large can be described as the arrival of the welfare state and most of us have not only condoned it but approved it. We have also approved Canada's stand in the cold war. This is the plain fact of today's taxes, and perhaps at long last we must simply accept it as being the overall condition with which we must live for the foreseeable future.

ORGANIZATION FOR COST REDUCTION

by J. L. Buckley, Jr.,
Controller,
McCormick & Co., Incorporated,
Baltimore, Maryland.

People are the power behind the organization and, hence, behind the cost reduction drive. If their interest can be captured in the many ways outlined by this author, the success of the cost reduction program is ultimately assured. Using his own company as an example, he demonstrates effective organization for cost control based on the psychology of the individual.

THERE is actually no one way to accomplish cost reduction. There is, so to speak, no Utopia, no one method that is going to lead to the ultimate in a cost reduction program. Too often, a search is made for the one idea or application that will cure all ills—a search that is really a futile one. Reducing cost and improving the profit picture are invariably the results of many small measures, properly applied. Anyone who has given thought to this vast business area can agree with this.

The approach to this whole subject of organization for cost reduction will undoubtedly vary from one company to another and will depend also upon the personality of the company as well as its personnel. A company is really not very different from an individual. Just as people and their personalities differ, so too do different companies. The personnel and management of one company or another make each company entirely different.

WHAT IS COST REDUCTION?

The subject might be opened by an attempt to define cost reduction. The definition of "cost reduction" that I feel is most appropriate is the following. Cost reduction is a dynamic element essential in the operation of any successful business. It is not something used only in times of crisis, but is rather a continuous, organized endeavour harnessing all available talent and facilities of a given company to reduce operating costs and thereby increase profits.

Organization is a word that everyone uses. The company is an organization and most people belong to additional organizations of many types. Webster's dictionary has a number of excellent short definitions of the word "organization." It is the act or process of organizing. It is a state or manner of being organized. It is a systematic arrangement. It is a connection of parts in and for a whole so that each part is at once end and also means.

Basically, the subject of this article may be defined as a *systematic arrangement of a dynamic element essential in the operation of any successful business.*

HOW DOES COST REDUCTION WORK?

Having defined the subject, the next consideration is of what is being attempted and what should be investigated. Most articles on this subject bring out seven basic

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John L. Buckley is Controller of McCormick & Company, Incorporated, and a member of its Board of Directors. His previous business experience included five years at the local office of Ernst & Ernst and, during the war, he was Navy Cost Inspector for a time at the Glenn L. Martin Company. He is a graduate of the Wharton School of the University of Pennsylvania and a Certified Public Accountant of Maryland. He is a member of the Controllers' Institute of America, the American Institute of Accountants and the Maryland Association of CPA's.

areas in a company which are subject to cost reduction analysis. They are referred to generally as finance and control, sales and marketing, manufacturing, products and service, purchasing, and personnel. When these areas of business are thought about as the ones subject to analysis for cost reduction purposes and the reason for the proper organization of cost reduction is considered, what is basically being considered is the overall corporate management or the overall corporate company. The areas mentioned concern every facet of business organization. When considering cost reduction, there is no business area which can be eliminated. Having reached the conclusion that cost reduction affects the entire company and that any company basically consists of people, the further conclusion is reached that all the people in the company should be reached. No one individual, no one group, no one section, should be missed in the search, because the cost reduction elements that should be analyzed affect each and every member of the business organization. Therefore, every employee becomes important to the organizational plans. It is about this basic theme that the problems of cost reduction should revolve.

In our company, the first thought has always been of our people. So, in this particular case, the company does take the approach to cost reduction through consideration of all its people. We have no formal program, no formalized set-up. We do not follow the practice of some companies in establishing cost reduction committees, but consider that our program has to go to every one of the people in the organization. This is an outgrowth of our regular method of business operation.

THE PERSONNEL APPROACH

In a recent article, a company president emphasized the following points of view. He said that his company never held a meeting to discuss cost reduction per se but, rather, that meetings were held for the purpose of looking into specifics such as wastes, rejects, absenteeism, and particular phases of operations that affected the overall costs and profits and therefore could very conscientiously be brought to the attention of all employees for purposes of cost reduction. He felt, further, that the surest way to lose interest in a cost reduction program was to schedule meetings calling attention to it by that particular name. He felt that the people should be gathered together in small or large groups to hear about things that directly affected them. In this way, he was able to bring them directly into the picture and explain how the things they were doing definitely affected the operation of the company. They could then realize what he was talking about as opposed to a program whereby cost reduction was constantly emphasized without bringing it to the degree that they, as individuals performing a certain job, could understand how they were a part of this cost reduction proposition. He felt that the term did not hold as much interest to a supervisor or employee unless it was applied to his own department, rather than being applied generally to the whole company.

This gentleman used good thinking because there is no one more interested or anxious about what is happening than the people down the line who actually do the job. He also stated that, as the employees' personal performance and behavior is applied to operational cost, it can be shown how their individual performance relates to overtime, loss of production, labor charges and wastes. Further, that the supervisor-employee contact can build the employee's sense of self-importance and identification with the company. What has to be done in the cost reduction program

is to try in every possible way to create an atmosphere not so much of cost reduction but rather of cost-consciousness. If a company president could reach the point where every employee thought of everything he did in terms of spending his own money, great cost reductions could happen overnight.

THE "POWER OF PEOPLE"

In our company, Mr. Charles P. McCormick, Chairman of the Board, was one of the nation's first business leaders to recognize, as he so aptly puts it, "the power of people." This is something that he has practised, talked about, and instilled in his management group at all levels ever since he became president of our organization. He has constantly brought to the attention of all his employees the importance to the business of each one as an individual and the part that each must play in its success or failure.

Every effort must be made to bring the employees into the cost reduction program and the plans concerning it. It must be admitted that some one executive in the organization has to make cost reduction his prime responsibility. In our company, this responsibility falls on the financial division and on the controller in particular. However, in that area there is much assistance given because top management is fully interested and co-operative in the program. We work on the area of awareness and we believe that the key individuals in the overall program are the line supervisors in the factory or office. To build and develop the program, it is necessary first to have the cost accounting system basically sound. Once it is sound from an accounting viewpoint, it must be seen to that those responsible for the cost elements understand the cost system and believe in its results. It is the awareness and understanding of each phase of the program by the people concerned that is most important. Actually, a good accounting system, one that is giving accurate and factual information, is an elementary prerequisite of proper measurement; in other words, without it how can there be correct measurement? How would it be known whether costs were increased or reduced? In this area of the cost reduction program, the cost accounting system has to be sound and, equally important, understood.

BUDGETS HELP CREATE COST AWARENESS

Another factor that is extremely helpful is the use of a budget system. It is more difficult to measure results when there are no objectives and a budget certainly furnishes the objectives. Our company has not been using a budget system for too many years. In fact, in the beginning, the accounting function actually set up the budget for all departments. This was not the way it should be done, but a start had to be made somewhere to encourage better budgeting in the future. Once the budget program got under way, reports were issued indicating the budget compared to actual, following which many questions were asked. That was the objective—to create interest among the people responsible for the various costs in the reasons for the costs being as they were. Later, the top levels of divisional and departmental management were brought into the budgeting activity and, naturally, this led to greater success. As the top management group of the various departments and divisions became interested, the people down the line from them also began to be interested. At this time, we are *almost* at the point where the budgets are completely prepared from the bottom and worked on up. There are still some budget areas to be further developed and the budgeting program has been in use for approximately

seven years. Within the next year, we hope to have a program wherein all the information starts at the lowest level and proceeds through all levels to the ultimate result of the complete budget. With this budget program, we have found a deeper interest in what things cost and why an expense is charged to a particular department or account. All of these things have helped drastically in the overall operations and particularly in the furtherance of cost awareness.

THE MULTIPLE MANAGEMENT CONCEPT

Our company operates under a plan called "multiple management." Multiple management means, as the term indicates, management by many. In addition to the senior board of directors, which is the stockholders' elected board, there are subsidiary management boards. There is a junior board, a factory board, and a sales board. These boards are a subsidiary or secondary level of management. They are all extremely helpful in many different ways. They are a perfect training ground for growing executives. They give all the men who participate, from all the various departments, a greater knowledge of the company as a whole. Their experience and understanding are broadened to a greater extent than would be possible if they were restricted to one department and only got out of it as their particular jobs might demand. This subsidiary board system is one of the greatest helps in cost reduction because, basically, the ideas that these board members work on are cost reduction ideas. Their improved methods, their improved machinery, and their studies of cost and expense factors accomplish great savings for the company.

As an example, just within the last year the factory board, by means of a thorough and detailed study, made a unanimous recommendation that the company invest in machines which are called "over-wrap machines." These machines take a dozen cans of spices or bottles of extracts and wrap them in manila paper as opposed to the previous method whereby these products were placed in a cardboard packer. It is a much faster operation and does a neater job with fewer employees. Actually, in less than a three-year period, the savings made through labor savings and savings through the use of paper will repay the required company investment. So it can be seen that the subsidiary management group is indeed helping in our overall cost reduction program. The same is true of the other boards. They do similar types of cost-saving activities and the company cost reduction program is benefitted by their ideas.

MEETINGS PROVIDE INCENTIVE

In addition, there are monthly meetings of all employees who work in the Baltimore plant, lasting for approximately one hour. All the employees throughout the building gather for these meetings in the cafeteria which has been converted into an auditorium. These meetings are for many purposes. They keep the employees advised of what is going on and keep them up to date on the latest happenings in the many areas of the business. Their attention is brought to certain current events. On some occasions, there are outside speakers or some of our men from outside the Baltimore division will speak about the divisions in which they work. At the same time, the employees are given suggestions and ideas on what they can do as individuals to do a better job with reduced costs and help to increase the overall profit of the company.

Each year, generally in February, the annual report is published. The fiscal year

ends in November and in February or March of each year employees' financial meetings are conducted which last about an hour and a half. To keep the meeting from being too impersonal, the employees are divided into groups of 80 or 90 and about five individual meetings are conducted. On this occasion, through the use of charts, the results of last year's operation and the financial condition of the business are explained to the employees, as well as how they, as an individual or group, and how we, as a company, progressed for the fiscal year. Here again, this opportunity is taken to acquaint every employee, not just the supervisors, with our financial position and, at the same time, bring them information to create and enliven their awareness of cost reduction or cost-consciousness.

This year, for the first time in many years, every salesman who sells our line of grocery products throughout the eastern part of the country was brought to Baltimore. There were three week-end meetings lasting Friday and half of Saturday. The main thing we attempted to do in these two-day meetings was to tell our salesmen about their company and review with them the financial results of the year. Our chairman of the board, president, and other top officers spoke to them and our vice president of human relations brought to their attention the company's program of human relations activities. The sales department had a half-day to discuss with them aspects of the marketing area. But again, in the financial presentation, it was brought to their attention exactly how they had done as a group, how they had done as a region, and what would have happened to the company in total if they had done a little better. Also emphasized were reasons why they should be particularly interested in their cost of operation as well as their sales results.

These various types of meetings present an opportunity to use a number of varied methods to inform our employees and to solicit their continued assistance in achieving constant cost reduction and increasing cost awareness.

THE SUGGESTION SYSTEM

In addition to the various things discussed, there is also a suggestion system handled by the junior and factory boards. As is necessary with suggestion systems, these boards are constantly thinking of new ideas and new ways to create interest in submitting suggestions among each and every employee. No one knows more about a particular department or operation than the supervisor of that department and the employees within that particular operation.

If we can continuously show progress over a period of time—and we have no Utopia in this field—even with all of these things that we do, we will benefit greatly and all of our efforts will be rewarded. We feel confident that we are going about it the right way and that we must continue in our efforts to reach every employee. There is no one who can sit in an office or walk through a plant and figure out where all the cost savings should and could be. But, on the other hand, if efforts of all types are used over a period of time to encourage everyone in the organization to be cost-conscious, many cost reduction savings will be realized.

SUMMARY

In summary, these are the points essential in the organization of cost reduction:

1. One person has to be responsible. That person must think constantly in terms of cost reduction and seize every opportunity to bring the subject to the attention of all employees.

2. Top management must have interest, co-operation, consideration and a firm belief that cost reduction is worthwhile and necessary. At the same time, they must have patience because ideas create more ideas and every idea does not produce the desired result; but the more ideas there are, the more opportunity there is to get worthwhile results.
3. A cost reduction program must encompass all employees, each person that is a part of the organization.
4. All possible means must be used to make all employees cost-conscious and cognizant of the need for cost awareness.
5. There is no single way to fulfil the needs of obtaining cost reduction. It has to be a combination of many ways.
6. It has to be a continuous operation. It cannot be started and stopped at will, but must be worked on constantly. There must be constant effort to improve and to think of new methods.
7. Cost reduction ideas must always be "glamorized" in order to make them appear new and different and to increase and create greater interest on the part of the employees.

Cost reduction and its organization is an extremely large and broad subject. This article has covered some of the methods that can be used in its accomplishment. This subject is most important today and will grow in importance in the future as competitive business conditions become stronger and stronger. In this fast-moving world of rockets, satellites and space ships, the companies that continue in the forefront of the business world will be those whose managements are thinking the fastest and are adapting to the fast changes of our times. The financial men in business management must continue to strive for improved methods to keep pace and it is hoped the ideas presented here will aid, in some measure, in reaching further goals.

For further reading

STREAMLINE, REDUCE, ELIMINATE . . . OR ELSE, by Gilbert R. Boutin, *Office Executive*, Apr. 1961.

ORGANIZING FOR PROFIT IMPROVEMENT, by D. R. Gilmaster, *Cost and Management*, May 1960.

CONTROL AND COST REDUCTION, *AICA Cost Bulletin*, Australian Institute of Cost Accountants, Jan. 1960.

GETTING AND USING COST REDUCTION SUGGESTIONS—A TEAM APPROACH, by L. Tellander, *N.A.A. Bulletin*, June 1959, Sec. I.

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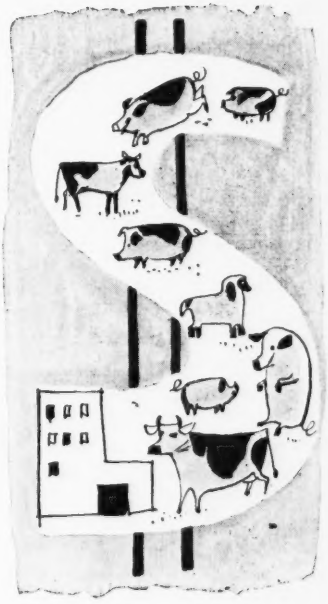
PACKING PROFITS . . .

and *idb*

A meat packing business was begun in a small way a number of years ago on the outskirts of a large Canadian city. The demand for the company's products grew to such an extent that the owners decided to expand the plant. They obtained a term loan from the Industrial Development Bank to finance the expansion.

As a result, the company's operations are now conducted more efficiently and on a larger scale. Sales continue to rise and the company is considering further expansion.

The Industrial Development Bank has many such cases in its records. IDB was established to provide financial assistance to small and medium sized industrial enterprises unable to obtain satisfactory term financing through other channels.



If you have a modernization, development or expansion program that requires term financing, you are invited to write or visit the nearest IDB office or consult your auditor, lawyer or chartered banker for information regarding IDB services.

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The Economic SCENE

by J. V. Poapst,
School of Business,
University of Toronto.

ARE TAXES TOO LOW?

THIS is a serious question: it is not just raised for the sake of argument. We have delegated many of the most important activities in our society to governments. It is in our best interests that they have sufficient funds to perform their functions effectively, yet we maintain a continuing attitude that taxes are too high. But taxes are not too high merely because they have increased. Whether they are high or low should be judged in relation to the relative values of goods and services produced by governments on the one hand and private enterprise on the other. If the benefit from govenment production increases *vis a vis* private enterprise, it is in the community's interest that taxes be increased so that government production can expand. If there is a shift in the other direction taxes should be lowered.

We invariably hold that taxes are too high for a number of reasons. Some are selfish, some are selfless. One that seems important is that we undoubtedly underestimate, perhaps very seriously, the value of the benefits that can derive from public expenditure. There are several reasons for this.

One is that our notion of inefficiency of public enterprise derives in part from facile comparisons such as that of the profits of our two major railway systems. The C.P.R. earns profits while the C.N.R. incurs losses. The fact that the C.N.R. was formed by welding together a collection of unprofitable private railways is often overlooked.

Other and possibly more important reasons lie in accounting practice. The financial statements published by governments differ from those of the business sector. Governments account their activities in terms of revenues and expenditures. Businesses view their performance in terms of profit and loss. The two approaches are different but they are often construed as comparable. Government surpluses tend to be viewed as tantamount to profits, deficits as tantamount to losses. Surpluses are desirable except when they get very large—then there are cries of over-taxation. Deficits, however, smack of waste—not undertaxation.

In consolidated accounts of government finances, outlays on plant and equipment are included in totals labelled as current expenditures. Although depreciation is not charged, current expenses can be overstated when government plant and equipment are being expanded rapidly. In 1960 total government outlays on goods and services amounted to $6.7 billion. Of this about $1.7 billion, or one-quarter, was outlay on durable physical goods rather than current consumption. This was more than double the so-called deficit which governments collectively incurred during the year.

The effect of this difference between government and business accounting can be looked at in another way. If government accounting procedures were to be applied to the corporate sector, rough estimates suggest that company profits would be reduced to about one-half their reported level. Business achievements would be far less impressive.

In conventional accounting, outlays on such items as research, advertising and employee training programs are treated as current costs. In recent years there has been a growing awareness on the part of businessmen that such costs are not necessarily current costs merely because they produce no tangible asset to be held by the firm. The criterion of whether or not an expenditure is a capital or current expenditure is not whether or not it is tangible, but whether or not it contributes to revenues beyond the current period.

This recognition that outlays on certain services should be viewed as capital expenditures rather than current expenses has important implications to our conceptions of the cost of government services and the value of government expenditures. Grants to hospitals for example can be viewed largely as capital grants whether or not they are used to finance the acquisition of hospital plant and equipment. Similarly, teachers' salaries are largely capital expenditures. So are the salaries of the scientists of the National Research Council.

High proportions of the total outlays of provincial and municipal governments comprise what can be described as investment in human capital. In 1958 outlays by Provincial governments for education, health and hospital care and other public welfare purposes, excluding old age pensions and relief, totalled $942 million. This was 49% of total current expenditures (excl. debt repayment). In the case of municipal governments, of a total of $1,207 million reported as current expenditures $408 million, or approximately one-third, was reported as expenditure on schools alone.

In a business enterprise, when the attempt is made to determine the profit that a proposed project may be expected to earn, care should be taken to reckon all the benefits and all the costs. It is easy to overlook indirect benefits and costs. The same approach should be followed with government expenditures. The personal income tax is a case in point. This tax is the largest revenue producer of the federal government. It is frequently contended that the progressive nature of the tax weakens individuals' incentives to work and thus diminishes the effort of the working force. If this contention is valid then the value of the labor so lost to society must be regarded as a deduction from the benefits produced by the government in spending the taxes.

Research which has been done on this subject suggests that this often-made claim also contributes to the tendency to underestimate the net benefits produced by government expenditures. A number of surveys have dealt with this question. Possibly the most noteworthy is that of Professor George F. Break. Progressive taxation may induce some persons to work less, others to work more, while still others are largely unaffected because they are bound to fixed work-weeks. For his survey Break chose a very tax-sensitive group in a country in which personal taxes are highly progressive. He carefully interviewed a sample of 306 solicitors and accountants in partnerships or in their own businesses in Great Britain. Members of these professions, unlike the mass of employed persons, are in a position to restrict their work in response to the lack of tax incentive. Break found that of his sample "about as many actually were working harder as were working less." (*American Economic Review*, September, 1957, p. 548.)

If on rational grounds taxes should be lower, by all means let us have them lower. But conversely, if they should be higher, it can be inimical to the interests of private enterprise to have them too low.

JOINT COST ALLOCATION AND MANAGERIAL DECISIONS

by Denis Goodale,
Associate Professor of Accounting,
Faculty of Commerce, University of Alberta,
Edmonton, Alberta.

In preparing cost data for managerial decisions, the accountant must recognize that his presentation of information should vary according to the purpose for which it is to be used. Wide fluctuations in cost may result from differences in the treatment of joint and common costs, and factors such as the marginal contribution from the sale of products or services produced under joint cost conditions, the market conditions of supply and demand, the possible actions of competitors and non-cost factors are likely to be more meaningful as a guide for managerial decision than the results of joint cost allocations.

ACCOUNTING is a service function designed to provide financial information arising from the economic activities of an enterprise. Accounting has many specific uses and therefore may serve many needs. A primary use of accounting is to assist management in controlling operations and to provide data which will increase managerial effectiveness. Cost accounting is a specialized phase of accounting designed to provide total and unit costs relating to the products and services of the enterprise. Cost data may aid management in setting standards, establishing policies and otherwise in controlling the operations of the firm.

Cost accounting may provide information upon which many managerial decisions will be based. In attempting to determine the costs of some products and services, certain conditions may be present under which some products are inevitably produced together. The use of common plant facilities may also result in the production of two or more separate products at the same time. Joint costs are therefore of two types, namely, joint product costs and joint operating costs, sometimes called common costs.

There are a multitude of conditions under which joint costs and common costs arise. An examination of some of these conditions will be made together with some of the usual cost accounting methods which are used to allocate joint costs. The usefulness of the joint cost allocations and the theory and assumptions upon which these cost methods are based will be assessed against the use to be made of the information obtained, primarily related to managerial decisions.

DIFFERENT COST DATA FOR DIFFERENT PURPOSES

At the outset it may be useful to examine briefly the nature of cost accounting and management's need of cost data for a variety of purposes. This analysis will serve as background as well as forming part of the study relating to joint cost allocation and managerial decision. It will be observed that the nature and type of cost information

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As Associate Professor of Accounting at the University of Alberta, Prof. Goodale has worked closely with the S.I.C.A. of Alberta for a number of years as well as lecturing on many of the Society's courses. He graduated in Commerce from the University of Saskatchewan in 1948 and was admitted into membership in the Institute of Chartered Acountants of Saskatchewan the following year. He has served as a member of the National Council of the Canadian Credit Institute and also on the Council of the Alberta Institute of Chartered Accountants.

to be obtained will depend largely upon the specific use or purpose for which the information is required.

The following will serve to indicate the variety of uses for which cost information is required by management. The degree of importance of the individual use will depend upon the circumstances and the use to be made of the information.

The most common need for cost data is for the purpose of inventory valuation and profit determination. Here the need is to trace and assign costs in the form of product costs to the various products which have been produced. The second step is to place a money value on the portion of goods left in the inventory and the portion of goods sold, as a part of the process of profit determination. The costing of joint products falls into this area, for the main purpose is to value inventories for income determination.

A second major object of cost accounting is in the area of budgeting, administrative planning and cost control. The emphasis is upon the use of standards, budgeting, planning for purposes of cost control and to measure the economic results and managerial effectiveness.

The final general area for which cost data are required is in the provision of information to assist in managerial decision making. This area includes consideration of alternative courses of action, pricing policies and the application of cost data to planning, policy determination and implementation of the policies. There are many questions facing management where a choice must be made from among a number of alternative courses of action.

Misunderstandings and difficulties may arise from a failure on the part of the accountant or perhaps on the part of management to recognize the need for different cost data for different purposes. The same basic cost data may be required for the various needs but they must be assembled in different ways according to the purposes for which they are required. For example, the allocations of joint costs may have been made for the purpose of inventory valuation. Subsequently management may require cost information for some different purpose, such as selecting a course of action from among several different alternatives. It is important to recognize that incorrect decisions may be made if cost data prepared for one purpose are used for an entirely different purpose.

THE NATURE OF JOINT COSTS

Common costs may be thought of as a variation of indirect costs, although to some degree they may be traced to products based upon the use made of the production facilities. Joint costs are those costs which are not directly or readily traceable to a unit of output, department or other segment of business operations but are common to more than one product or division of the business in a way which is not clearly measurable. Joint costs include both material and labor, and are sometimes applied to include common costs.

The problem of controlling costs and responsibility accounting is based upon the concept that no person should be held responsible for a cost unless that person has control over its incurrence. The allocation of joint or common costs may lead to the situation where someone is held accountable for certain costs which have been allocated to a particular division, and yet the individual being held responsible had no control over incurring the cost.

According to the *Cost Accountants' Handbook*, joint costs are of two types, namely:

1. Joint overhead costs representing the cost of services which are to be apportioned to various departmental accounts.
2. Joint production costs where the processing of raw material produces a variety of products.[1]

The same book defines joint products as representing "two or more products separated in the course of the same processing operations, usually requiring further processing, each product being in such proportions that no single product can be designated as a major product."[2]

In dealing with the matter of joint costs, Paton and Littleton state that the problem arises because "management often desires to departmentalize charges—that is, match costs with particular types or classes of revenue."[3] They further state that "joint costs are found wherever there are common material and plant costs; in virtually all enterprises moreover, the costs of general administration and supervision are to some degree joint costs."[4]

Under conditions where an "explicit division of common costs is deemed necessary in connection with some administrative policy, or in connection with rate regulations or other matter involving the relation of the enterprise and government,"[5] Paton and Littleton suggest assignment of common costs on the basis of the relative market value of the products. In support of this approach they state that management has certain ends in view and incurs the cost of operations according to the economic results which it expects will be achieved. The justification or reason which is advanced in support of allocating fixed costs to products, territories, types of customers, etc. is usually one of equity, that each classification should bear its fair share of fixed overhead. However, the usefulness of such cost assignments from the standpoint of cost control or as a basis for deciding whether to continue or abandon a product or territory may be questioned.

The proposal to allocate common costs on the basis of the relative market value of the products in connection with rate regulation appears to be somewhat contradictory. For the costs are to be allocated to different classes of users using the market value of the products or services, where the regulated selling price is in turn influenced directly by the costs so allocated. The process is a form of circular reasoning.

It is not the purpose here to examine in detail the different methods of handling overhead in the accounts or to deal with the methods of joint product costing which are usually employed. Accounting for joint costs and joint product costs is usually employed for the purpose of inventory valuation and profit determination. The same information has often been used for other purposes such as setting selling prices and as the basis for various other managerial decisions. The problems relating to joint operating costs and joint product costs will be used to illustrate the importance and the truth of the statement that cost data and factors which are significant for one purpose of accounting, such as profit measurement, may be irrelevant for some other

[1]Theodore Lang, *Cost Accountants' Handbook* (New York: The Ronald Press Co. 1956) p. 497.

[2]*Ibid.*, p. 501.

[3]Paton and Littleton, *An Introduction to Corporate Accounting Standards*, American Accounting Association, p. 75.

[4]*Ibid.*

[5]*Ibid.*, p. 76.

purpose. Management requires information upon which to base decisions in order to make the most efficient and profitable use of available resources and alternative opportunities. An examination will be made of the nature and treatment of joint costs and the relationship to various areas in which managerial decisions may be required.

VARIETY OF JOINT COST CONDITIONS

A series of examples will be used to illustrate the variety of circumstances in which joint cost conditions exist and their relationship to alternative opportunities requiring managerial decision. Where management is required to make a choice from among alternatives, it is usually only necessary to determine how the costs will differ under the various alternatives available. Where cost and revenue changes are expected, the marginal contribution of each alternative will need to be determined. The time period involved is a significant factor when the decision in question relates to cost or revenue factors which may be affected immediately or may be affected only over a relatively long period of time. Management needs to know the likely response of costs to changes in the underlying conditions which create the costs.

Joint costs were considered to be of two general classes, namely joint overhead costs and joint product costs. In the presentation to follow, joint overhead costs will be considered first.

In an article entitled "Limitations of Overhead Allocation," the author, William J. Vatter, pointed out that "the combination of resources inherent to the processes of business has the effect of making costs joint at the very point of incurrence."[6] He further stated that costs are incurred jointly where the cost and use of one factor of production may be affected by variable factors of production. Incorrect interpretations and incorrect decisions may result from a failure to recognize and understand the nature of joint costs.

TREATMENT OF JOINT COSTS

There are two methods of treating joint costs when considering such costs in relation to a segment or division of the business. The cost may be allocated or apportioned over the segments in accordance with some predetermined basis. The method used may be based upon the use of the service for which the cost was incurred. Secondly, the joint costs may be apportioned on the basis of the availability of the facilities or services rather than upon the use made of the services. It may be possible to allocate the variable expenses to divisions of the business on the basis of use and the fixed expenses on the provision or availability of the facilities.

The alternative to making an allocation would be not to do so but to deduct the joint costs from the total profits of the various segments or divisions.

CONTRIBUTION MARGINS

Under certain conditions the allocation of joint costs may be misleading. In order to determine whether or not it is profitable to continue operating a department, or continue with the production and sale of a particular product it is necessary to determine the contribution margin of the segment or product under review. The most useful analysis is to determine which costs will not be incurred if some of the operations are discontinued and compare the total of these costs with the loss of revenue which

[6]William J. Vatter, "Limitations of Overhead Allocation," in William E. Thomas ed. *Readings in Cost Accounting, Budgeting and Control*, p. 222.

would arise from the decision to discontinue the particular operations in question. Where cost data are required for this particular purpose, no allocation of overhead expenses should be made. The critical factor is the marginal contribution of the particular product or segment of the business to cover overhead and profit.

Further analysis should be made to determine the possible alternative uses which could be made of the space, facilities and other overhead factors if the product or segment in question were to be discontinued. The only alternative may be to close part of the plant or sell some of the plant assets.

The preparation of financial statements which are designed to show the marginal revenue contribution will reveal to management the most profitable areas and those divisions which require the attention of management to cut losses or increase profitability.

COST CONTROL

Another purpose of accounting is to control costs and to place responsibility for the incurrence of costs. If this purpose is to be served properly, the allocation of joint costs is likely to be misleading and irrelevant. Responsibility accounting means that the individual is to be held accountable only for those costs over which he has some considerable measure of control. The costs must be measured against the results or benefits arising from the decisions. Some costs may be subject to control only by top executives and other costs may prove to be beyond their control, at least in the short run.

AID IN SETTING SELLING PRICES

It is sometimes suggested that common costs need to be allocated in order to aid in establishing selling prices. Perhaps the reason behind this proposal is the desire that each product or service should be charged with its fair share of overhead in the determination of selling prices. Charges of price discrimination may result where differences in selling price are not justified by differences in cost.

Except where law or government controls exist to regulate selling price, the method of cost allocation which is used to apportion joint costs will not in most instances affect the selling price of the various component products or services. "So long as conditions approaching pure competition obtain, the price of each jointly produced commodity will be determined by the operation of demand for the particular commodity and the supply determined in conjunction with the other products jointly produced."[7] If the producer desires to maximize the total revenue of the firm by setting prices which will yield the greatest return, the demand for the products and its relation to the supply of the products produced from the common material and the total costs will be the useful information and not the figures resulting from cost allocations.

The situation where a firm is operating at or near full capacity may warrant a modification of the contribution margin approach as the basis for accepting orders. One order may result in contributing a larger dollar amount to overhead and profit than another order but the first may require a disproportionate amount of limited plant capacity. If supply is the governing factor in establishing the selling price, the

[7]C. T. Devine, *Cost Accounting and Analysis* (New York: The Macmillan Co. 1950) p. 114.

business man in order to maximize profits might charge "what the traffic will bear," and cost allocations will be of little if any significance.

The cost of using facilities and services within a firm may be indivisible with respect to the various uses to be made of the facilities and services. Complementary products may be produced from the available facilities in order to absorb part of the overhead.

CREATION OF CONDITIONS OF COMMON COSTS

There are a variety of circumstances under which common costs exist. Often products or services are made available to utilize excess capacity. Products may be complementary and as such are primarily related on the demand side rather than on the cost side. The seasonal demand for many products has caused firms to handle other products in the season which would otherwise be idle. Additional products or services may be offered to reap the advantages of advertising and brand names.

Product diversification and integration would seem to have developed at least partly from the recognition and application of the marginal revenue contribution concept. These factors appear to be evidence that managerial decisions are in part at least based upon the marginal contribution approach and that joint cost allocations are of limited usefulness to management in making decisions in this area.

Differential cost studies are required to aid management in making decisions with respect to changes in volume of production, acceptance of business at a special price, additions of products or services to utilize idle capacity, and the questions of integration. These and other problems involving a choice from alternatives require special studies involving the recognition of the indivisibility of many costs.

DIFFERENT CONDITIONS RELATING TO JOINT PRODUCTS

Conditions creating joint product costs and problems relating thereto will now be considered.

Professor Jacob Viner has stated that joint products are "commodities which are sufficiently distinguishable from each other to have different markets and to command different prices even under competitive conditions, but which are partly or wholly the outcome of a common process of production."[8]

Conditions of joint production also exist with regard to services. The provision of a variety of services by an individual or firm may be cited as an example.

Professor Viner also pointed out that where conditions are not competitive, the same product may be sold in different markets at different prices. "For example a doctor charges different fees to rich and poor for the same work."[9]

Accounting literature makes a distinction between joint products and by-products using the relative importance based upon revenue as the criterion for the classifications. Any attempts to allocate costs among the various products so produced must surely be arbitrary. The profitability of the production of joint products can only be determined by reference to the total revenue from all the products of the process.

FIXED PROPORTIONS OF CO-PRODUCTS

The proportions of the resultant products of a production process may be unalterably fixed in relation to a given quantity of raw material. The production of one product automatically results in the production of other products. The more common

[8] *Encyclopedia of the Social Sciences*, Vol. 4, p. 473.
[9] *Ibid.*

methods which are used to allocate costs to joint products are based upon relative weight or other unit of measure or relative market value of the products. The amount of the net profit or loss is unaffected by the method used to allocate the costs providing all of the goods produced have been sold. One reason for the desire to allocate joint costs to products is to determine some valuation for the closing inventories and thus determine the "profit". The use of the relative sales value method to assign costs to inventories produced from a common material results in uniform profit margins being shown for the various products as far as the joint costs are concerned.

Where the conditions are such that the production or processing of a given material results in fixed proportions of a number of products, the economic aspects would appear to indicate that in the long run the total revenue must cover the costs involved plus profit. The selling price for the individual products will depend largely upon the demand for the product in relation to the supply produced in conjunction with other products jointly produced. The profitability of the process can only be determined by finding the total revenue from all of the products and comparing it with the total costs. Demand for the various products is likely to be an important factor in influencing selling prices. The total revenue from all products produced jointly will have a close bearing upon the price which will be paid for the raw material from which the joint products are produced.

Since the production of one product automatically results in the production of one or more other products, many decisions which must be made by management can only be made after the point of separation. Prior to this point, the joint products must be treated as a group.

VARIABLE PROPORTIONS OF CO-PRODUCTS

Within certain limits the production process may result in the yield of joint products in varying proportions, depending upon the production methods which are employed. Such variability may or may not require different cost conditions. Different personal services may be cited as an example. The oil, chemical food processing industries, farming, transportation and other service industries are further illustrations of this flexibility.

Multiple products may be produced or a variety of services rendered in order to utilize existing capacity. The resources available are indivisible with respect to their alternative uses. Additional revenue can usually be obtained with very low marginal cost. An important illustration is the railroad offering transportation services. Similarly, a manufacturing plant may be able to utilize available capacity by adding to its product line.

SETTING SELLING PRICES

Cost information may be required to set selling prices. If revenue is to be maximized the production of one or another of joint products within the limits of variability will likely be influenced by the demand and by the relative selling prices of the different products. The marginal contribution of each product compared with the other products is likely to be an important factor in determining which products will be produced within the limits available. The selling prices of products and demand conditions will have to be analyzed frequently in order to determine the quantity of each product to be produced and sold in order to yield the greatest net revenue.

In deciding upon the different proportions of each product to be produced, management will need to assess the marginal contribution of each product. The most desirable alternative under the theory of profit maximization will be obtained where the increased revenue arising from the production and sale of a greater amount of one product rather than other products, less the additional costs involved under the alternative selected, exceeds the loss in net revenue arising from the curtailment of the production of the other products.

Cost accounting data will be required to determine changes or variations in the output of the products in question. The selection of the variation in the products in the refining of crude oil will depend upon differential cost and revenue analysis. The cost accountant "must constantly estimate the increments or decrements in the flow of costs following any suggested change"[10] in the production within the variable limits of products which are in joint supply.

EFFECT OF ALTERNATIVE USES AND SOURCES

The availability of substitute raw materials and the alternate uses of certain materials and products will be factors which influence product costs and selling prices. H. C. Greer stated that "nothing can be purchased for less than it will bring if diverted to its next most valuable use. Nothing can be sold for more than the price of its most acceptable alternate."[11]

It is also important to recognize that once action has been taken as a result of managerial decisions certain factors become fixed in the short run until the opportunity arises to make a subsequent decision which may modify or change the results arising from the original action. For example, once raw materials have been purchased, or facilities acquired, other factors may be more controlling regarding selling price. Such factors would include actions of competitors, processing costs and the stability or elasticity of demand for the products of the firm. Costs which are generally considered to be "variable" such as material or labor, may actually be "fixed" in the short run as a result of managerial policy or decision. The characteristics of the raw material such as perishability or factors of style or obsolescence related to the finished product may cause demand to be the controlling factor in determining selling price.

Another question involving joint costs and managerial decision arises where some of the residuals from a common raw material may be disposed of after the point of separation or may be subject to further processing. After the point of division or separation, a product or residue may be sold if it has a market or it may be further processed. Economic considerations indicate that the selling price of the product after further processing must be at least as much as the additional costs which are required to complete and sell the product, for otherwise the firm would have no incentive to process the material any further. The revenue derived from selling the product after further processing, less additional costs associated with the further processing including variable overhead, would need to exceed the proceeds from immediate sale of the product at the point of separation.

[10]R. S. Edwards "Cost Accounting and Joint Production," in D. Solomons ed. *Studies in Costing*, p. 315.

[11]H. C. Greer "Cost Factors in Price Making," in William E. Thomas ed. *Readings in Cost Accounting, Budgeting and Control*, p. 438.

Where management decisions are required regarding the variation of output of one product or another which are produced from a common raw material, the assessment of the marginal contribution of the various alternatives appears to be the principle to be applied where the underlying purpose is to maximize profits.

USE AND MODIFICATION OF THE CONTRIBUTION MARGIN APPROACH

Certain precautions must be exercised in utilizing the contribution margin approach as an aid in formulating managerial decision. Some of these cautions have been outlined in a research bulletin issued by the N.A.C.A.[12] All costs which will be affected by a given alternative must be related to the appropriate alternative and must not be ignored as being an unrelated or a common cost. There may be significant variable costs which are considered to be joint costs, but of which cognizance must be taken in giving consideration to alternative courses of action.

All relevant costs affecting each alternative must be considered as well as the comprehensive effect of each decision. These factors may be of an intangible nature such as potential future profits and relation to the product line and other factors for which accurate assessment and measurement may be difficult. The materiality of profit differentials will also serve to modify the application of the contribution margin approach.

CONCLUSION

In conclusion, it is suggested that caution must be exercised in interpreting and using cost data which have been prepared as a result of allocation procedures. The problems of setting selling prices, cost control and the need for information upon which to base managerial decisions regarding alternative courses of action demand a full knowledge and understanding of the nature and treatment of costs and the specific purpose for which the data are required. It is apparent that wide fluctuations in costs may result from differences in the treatment of joint and common costs, such as the use of different methods of allocating material, labor or overhead costs to different products or segments of the firm.

Factors such as the marginal contribution from the sale of products or services produced under joint cost conditions, the market conditions of supply and demand, the possible actions of competitors and non-cost factors are likely to be more meaningful and relevant as a basis for judgment leading to managerial decision than are the results of joint cost allocations.

[12]Assignment of Non-manufacturing Costs for Managerial Decisions Research Series No. 19, *N.A.C.A. Bulletin*, 1951.

For further reading

COSTING JOINT PRODUCTS, N.A.C.A. Research Series No. 31, April 1957, National Association of Accountants, New York, N.Y.

THE COSTING OF JOINT PRODUCTS AND BY-PRODUCTS, W. M. James, *The Cost Accountant*, June 1955.

THE COSTING OF UNFINISHED JOINT PRODUCTS, Erickson and Spivack, *N.A.C.A. Bulletin*, Dec. 1954.

SOME INSTANCES OF PRACTICE IN BY-PRODUCT COSTING, R. S. Wasley, *N.A.C.A. Bulletin*, April 1953.

The Editor's Choice

FLEXIBLE BUDGETS AND THE ANALYSIS OF OVERHEAD VARIANCES
by Prof. D. Solomons, Management International, 1961/1.

In this first issue of what promises to be an excellent journal, Prof. Solomons discusses the shortcomings of the two- and three-variance analysis systems. To overcome the deficiencies of these methods, the author suggests that there should be four variances: a budget variance, a true efficiency variance, a volume (capacity) variance, and a volume (efficiency) variance. In order to make this analysis, it is necessary to build into the flexible budget a distinction between time variables and output variables. This article is not easy reading, but the author supports his theory with clear examples and makes a convincing job of promoting the method.

EXCLUSIVE SURVEY OF PRODUCTION AND INVENTORY CONTROL
Factory, April 1961.

How does your firm stack up against others in the field of production and inventory control? This is an exclusive report on the practices of 387 firms. The firms covered ranged in size from under 200 employees to large firms employing over 5,000. The survey tabulates the answers to such questions as how many people do you need, what determines production output and inventory levels, what does it cost to interrupt production, and how much are you using O.R. techniques?

DEPRECIATION
N.A.A. Bulletin, April 1961.

Three articles in this issue cover the depreciation problems: 1) "The Effects of Combinations of 'Fast' and 'Slow' Depreciation on Reported Net Income" discusses the ways in which net income figures vary depending on the method used; 2) "Toward Variable-Base Fixed Asset Accounting" discusses opposing views on the problems and concludes that obstacles to agreement are not great; 3) "The Mathematics of Accelerated Depreciation" gives simple algebraic equations that may be substituted for periodic time-consuming calculations.

RESPONSIBILITY REPORTING
edited by K. S. Axelson, Peat, Marwick, Mitchell & Co.

This is a collection of reprints prepared by Mr. Axelson of Peat, Marwick, Mitchell & Co. for use at a management seminar. The material is selected from many sources and is well presented under such headings as design of the system, performance measurement, and profit planning. There are also several case studies.

DIRECT VERSUS ABSORPTION COSTING
by A. W. Patrick, The Controller, April 1961.

The author gives definitions of direct and absorption costing that are currently used. He shows the desirable features of both, but states, "Until a definition of direct costing which clearly distinguishes it from absorption costing is generally accepted and used, discussion of direct costing will continue to be entangled with matters not pertinent to the real difference." He compares the two methods under the headings: 1) separation of costs into fixed and variable elements; 2) proper use of costs in decision-making; 3) improved internal operating reports.

QUALITY COSTS*

by R. B. Stotts,
Quality Supervisor,
Wolverine Tube, Division of
Calumet & Hecla of Canada Limited,
London, Ontario.

In his search for a better measurement technique, the modern quality control manager has found an effective answer in quality costs. Business competition today demands that he work constantly towards the economic objective of better quality at lower quality costs. This paper reviews some of the means for analyzing quality costs and shows how they can be used for more efficient control and management.

HOW is quality measured in industry today? There are any number of yardsticks, among them; percent units scrapped, number of defective pieces, quality levels, pounds scrapped, number of complaints and many others.

All of the above are useful to the machine operator or quality and production supervisor who is concerned with the hour-to-hour assessment of quality. He needs this information in order to take immediate corrective action and usually one of the above forms is the most valuable tool for this requirement.

However, what does quality control management or general management need to assess intelligently and accurately the quality aspect of the operation? What is needed is a universal yardstick that is easy to understand and what better one is there than dollars? Dollars and cents are the ultimate yardstick for measuring how well a company is doing. Industry talks in terms of sales dollars, labor dollars, and raw material dollars. Therefore, as quality costs are a significant percentage of the manufacturing dollar in most companies, it would seem reasonable to talk about quality dollars. In a recent survey of a cross-section of manufacturing concerns, it was observed that approximately 20¢ of each manufacturing dollar was spent in the quality cost area.

It is necessary to know how much quality is costing and where quality costs are incurred. It is also necessary to know them in their order of dollar importance, for it would be useless to spend time putting out little cost fires while major dollar conflagrations go unnoticed. These costs must be known, but there must also be a comparison basis that will permit relation of these costs to the rest of the operation. These figures must be available on a monthly, quarterly or annual basis so that progress can be measured and the return determined on the investment in inspectors, quality control engineers, technical personnel, laboratory equipment, etc. It must

* A paper delivered at a joint meeting of the London Chapter of S.I.C.A. and the Western Ontario Chapter of the Society of Statistical Quality Control in London on February 16, 1961.

A graduate of Queen's University with a Bachelor of Science Degree in Metallurgical Engineering, the author joined Wolverine Tube in 1958 as a Metallurgist. That same year he was promoted to Quality Supervisor. His business experience includes four years with the Aluminum Company of Canada Limited as Development Engineer and Production Supervisor in the Smelter Division and a year with Minnesota Mining & Manufacturing of Canada Limited as Production Supervisor. He is a member of the American Society for Quality Control, American Society for Metals and the Society for Advancement of Management.

be determined whether too much or not enough is being spent in these areas. Sometimes too much is being spent but, more often than not, a little greater expenditure in some areas of the operation would provide a dramatic return.

It is a trite but true saying that, "You have to spend money to save or make money." It would be better to add the word "intelligently" here, for there is no doubt that money must be spent *intelligently* to save or make money. This is what must be done in today's ever-tightening competitive economy in which quality costs must be known as never before.

WHAT ARE QUALITY COSTS?

At this point, it might well be asked—what is meant by quality costs? Obviously, it is necessary to define them and, to do this, the general term has been broken down into three main categories—appraisal, prevention and failure.

Appraisal costs are those costs incurred as a result of measuring and controlling current production in order to ensure conformance to present quality standards. These would include such costs as laboratory operation, inspection functions, keeping clerical records and issuing reports.

The second cost area is that of preventive costs. These are the costs incurred in analyzing, planning and designing a quality control program, quality training and pre-production engineering of product or process. Obviously a process must be designed that will permit operation at a reasonable level of production and quality efficiency. There is no point in designing a product that cannot be produced economically with the material and equipment available. The design of the quality program is essential to the success of most production programs so that quality performance can be evaluated and the quality control information used to take corrective action on the process at appropriate times. The cost of designing the program must also be learned. For example, should $1,000 be spent on designing a control that can net a return of only $500, whereas in some other area $100 might be spent on a program where $100,000 is at stake?

The third major area of this cost breakdown is that of failure costs. Some people call it scrap, rework or returned material, but it still amounts to the same thing—lost profits. Failure costs are those dollars that any company loses through defective material, either in process or at final inspection, the cost of inefficiency that usually results from defective material, the cost of rework, and the cost of handling defective material. In some unfortunate cases, defective material reaches the customer and this costs directly in handling and re-supplying material and indirectly in reputation and future sales. As a result of defective material, money is spent to handle complaints, telephone calls, a salesman's rush call, a visit from the plant; a replacement order may be required, usually in a rush, and then there is the cost of paperwork and the actual cost of the returned defective material.

So it is seen that failure costs are many and varied. Actually, they involve a great deal more than the labor, overhead and material costs that have gone into the product. The "other" costs of handling, production inefficiency, loss of sales and reputation in many cases amount to more than the actual scrap cost of the product.

WHAT IS NEEDED TO OBTAIN QUALITY COSTS?

One concept of what constitutes quality costs has just been described. What must be done now is to accumulate these costs from the infinite number of areas where

they are incurred. Obviously, a highly efficient system is needed to do this and information on the various aspects that constitute the quality costs must be relayed to the finance people. Usually those costs that fall into the preventive and appraisal categories are readily available in one form or another. It is usually known how many people are employed in the inspection and technical departments and what they are paid. Their duties are known and an accurate estimate of how much of their time is divided between the preventive and appraisal categories can be made. The number used and the cost of pencils, paper clips, micrometers, gauges and, in the case of laboratories, chemicals, are usually known or can be determined. It may be a minor struggle to assemble all these costs in the same place at the same time but, having done so, an effort should be made to assign them to either of the two categories—preventive or appraisal. Usually these costs do not fluctuate a great deal from month to month, so a standard division of these costs into the appraisal and preventive categories can be made that will apply unless a major change in staff or operation occurs.

Now comes the hard part. The failure costs must be determined. These costs reflect how effectively the appraisal and preventive dollars are spent; scrap and rework cost, cost of returned material, cost of handling complaints and—worst of all—lost sales or customers. A cost like that of returned material is not too difficult to obtain. Usually returned goods notices, showing the number of pieces, sizes, etc., forwarded to the finance department are sufficient.

The cost of handling complaints is very difficult to determine. One way of doing this would be to make an accurate cost survey of handling, say, ten various complaints that are representative of most of the complaint areas. Then take an average dollar value for handling a complaint and use that for calculating the monthly cost of future complaints. Admittedly, this is not too accurate but it can provide a practical yardstick.

The cost of lost sales or customers is even more difficult, if not impossible, to determine with any degree of accuracy. To do justice to this subject would take a separate article but suffice it to say that, if this happens, the costs are usually rather large.

Next come scrap and rework costs. One way to get these, certainly, is through production reports on which the production operator or foreman records his good and bad production. Obviously, the reporting here would not normally be in dollars but in pieces at a particular stage of manufacture. This information would then be translated by the finance people into dollars.

Depending upon the type of quality control program used, this recording of defects or scrap material can sometimes be done more easily in the quality control records and then forwarded to finance. In any event, the best or most effective system for any particular operation obviously depends upon the nature of that operation; the staff, the quality control program and the type of people in the organization. Sometimes an existing system is not adequate for the job and changes are required. However, the two essential elements involved are:

(1) It is necessary to have a good system—one that can work.

(2) It is essential that the coverage be complete and that the people who have to make this system work be aware that accurate, complete information is required.

Usually, a good system can be designed without too much difficulty. Frequently, however, the second point constitutes the bigger problem. Though it may be believed that everything is being reported and that all areas have been covered, this is not always the case. Only when one really starts digging into the facts is it realized how incomplete the information may have been.

HOW TO PRESENT QUALITY COST INFORMATION

There is no question but that any cost report, even a quality cost report, should be issued by the finance department. The job of production or quality control is to supply finance with complete and accurate information. The quality control group which will use the report should describe to finance what costs are required in the report, how the data should be presented—by machine operator, department or product—and the frequency of the report. The frequency of the report is important and, for most operations, a monthly or possibly a quarterly report would be quite adequate. To report more frequently than once a month would be unnecessary. The format of the report will vary from company to company depending on the operation and the individual manager's preference. Table I shows what might be a typical

REJECTION REPORT TABLE I

Dept.	Production Order No.	Operation	No. Pcs.	Direct Labor & Overhead
A	1201	2	5	$ 43.00
A	1201	3	3	16.00
A	1201	4	15	740.00
A	1201	7	2	11.00
A	1202	14	4	23.00
A	1202	18	34	2460.00
A	1202	19	3	15.00
A	1342	2	16	1050.00
A	1342	8	5	100.00
A	1342	11	5	172.00
A	1342	12	7	620.00
			Total Dept. A	$ 5250.00
B	1201	14	5	120.00
B	1202	21	11	590.00
B	1202	22	2	120.00
B	1202	25	30	1470.00
			Total Dept. B	$ 2300.00
C	1202	23	2	100.00
C	1202	24	3	140.00
C	1342	13	5	1050.00
C	1342	15	1	20.00
C	1342	16	18	8250.00
C	1342	18	5	1640.00
			Total Dept. C	$11200.00
D	1201	16	3	820.00
D	1342	20	5	1680.00
			Total Dept. D	$ 2500.00
			Grand Total	$21250.00

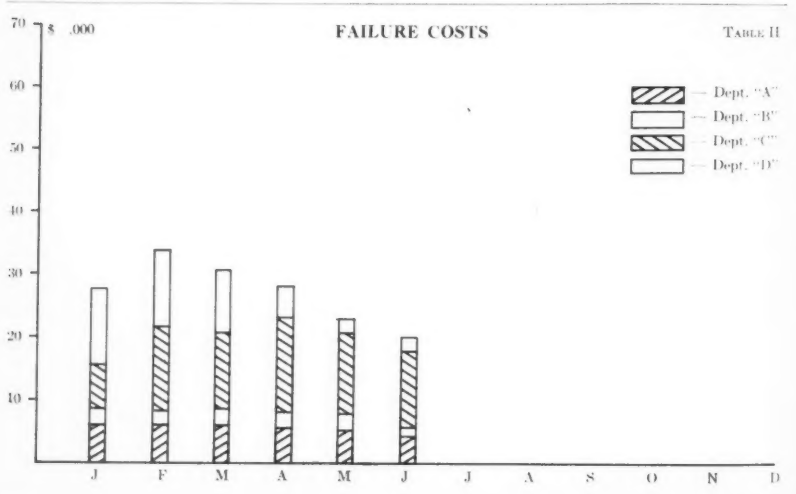
report of a small manufacturing operation with a number of departments through which a number of products flows, various operations being performed in each department.

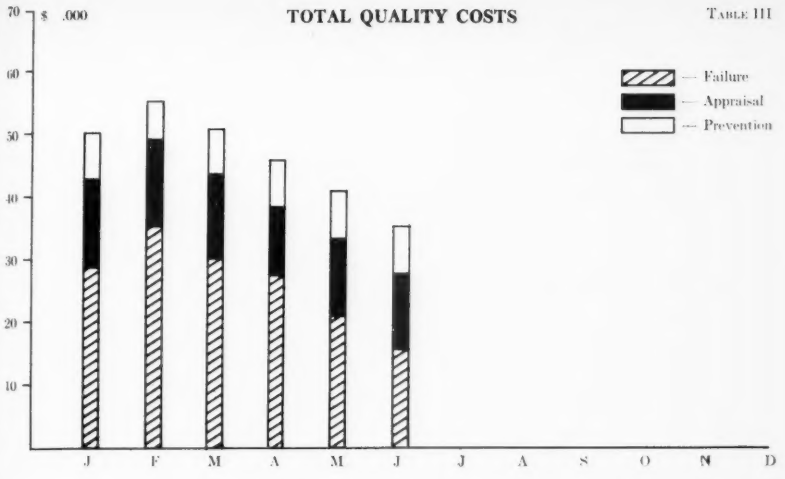
A cost presentation such as this would not be complete without comparing the actual quality dollar against some yardstick. Dollar sales, units produced or cost of productive labor and overhead can be used, depending on the operation. If, for example, the operation is one in which production can be substantially changed without appreciably changing labor costs, then labor costs would not be a good yardstick, whereas units of production might be. For this illustration, the cost of production labor and overhead has been used as a measuring stick. This would apply in a situation where production is directly related within reason to the number of people employed. Tables II, III and IV show how quality cost trends can be effectively evaluated.

Following is the finance and, more specifically, the cost department's contribution to the determination of these costs.

The failure costs and their yardstick for comparison are determined as follows. The finance department uses a standard cost system and has a standard cost sheet for each product. The cost sheet shows, by numbered lines, the accumulated standard cost of the product at the end of each production operation. The plant production orders are correlated to standard cost sheets by means of the routing numbers. A daily production report by machine is prepared by the production personnel, showing the routing number, the line number completed (i.e., the operation), and the number of pieces, showing separately the good pieces and the rejects. From this information, the tab section calculates the value of rejects at the point of rejection.

The finance department prepares a monthly report showing the labor and overhead earned by each production department. Because these figures vary directly with the productivity of the plant, they serve as the yardstick with which to compare reject costs.





It would be well to mention here that punched cards can be used quite effectively to record and present this information.

HOW TO USE QUALITY COST INFORMATION

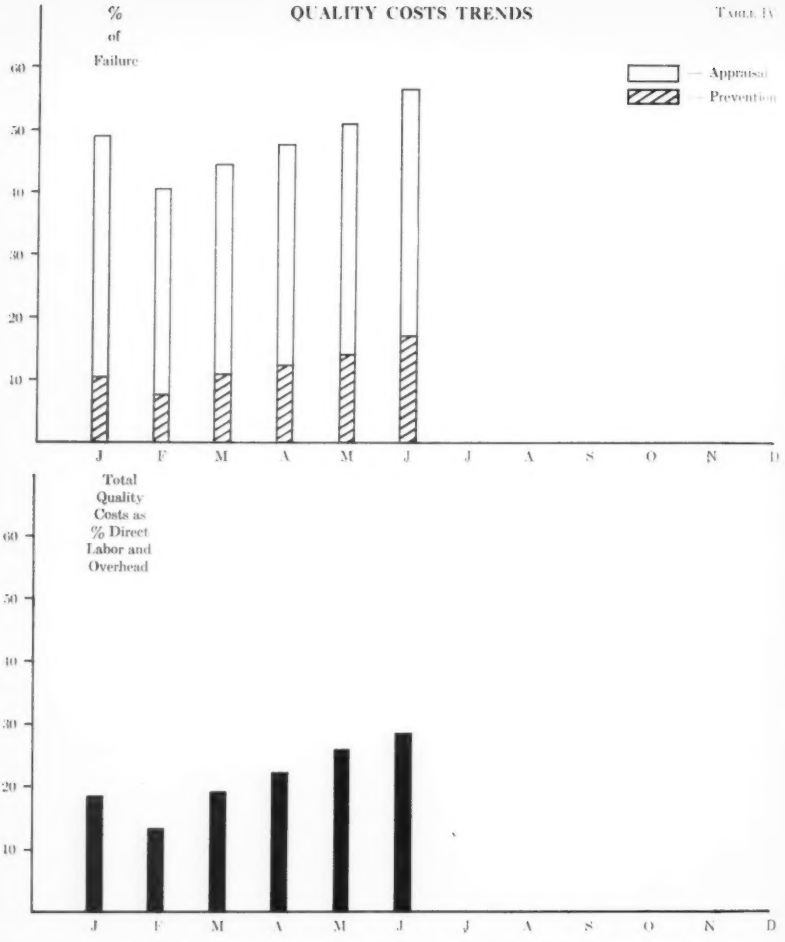
There are four basic ways in which this quality cost information can be used.

First, it can be used to measure the overall quality performance of the organization. It is just as necessary to know how much quality is costing the company as it is to know the costs of direct labor, overhead and material. There is no better tool to measure this performance than an analysis in dollars and cents. As mentioned previously, the ultimate yardstick against which all companies and corporations are measured is the dollar.

Secondly, it can be used to analyze performance in terms of pin-pointing high manufacturing dollar loss areas. Measurements or yardsticks other than dollars may not give a true relative picture of quality problem areas. Quality costs will put all these dollar loss areas in their true order of importance so that the four-alarm quality fire will not go unnoticed while several quality bonfires are being fought elsewhere.

Thirdly, it can be used to program the activities of a quality organization so that the available personnel and dollars can be directed into those areas in which the most return on the quality investment can be realized.

Fourthly, it can be used to budget realistically for proper investment in preventive programs in relation to improvements to be gained. It must be known today—is enough, too much, or just the right amount of money being spent in the prevention and appraisal areas? As business conditions change, such information will have to be available tomorrow, next week and next year. Basically what must be known is—is it possible, by spending another thousand dollars a month in the prevention area, to save $10,000 a month in the failure area?



In summary, quality costs have many uses and are extremely valuable to the progressive quality manager. They help him manage the activities of his function more effectively and, by so doing, put his company in a stronger competitive position.

For further reading

TODAY'S CRISIS IN QUALITY CONTROL, by Lawrence F. Mihlon, *Factory*, Dec. 1960.
WORLD-WIDE QUALITY CONTROL. Exclusive Report, *Factory*, Jan. 1961.
PRODUCT QUALITY: PRETTY GOOD ISN'T ENOUGH, by Frank H. Squires, *The Management Review*, Oct. 1959.

TOPICAL comments

LOOKING AHEAD

Satellite communications will be a $100-billion business within 20 years according to predictions. Several large U.S. companies are set to blast off their own private TV and telephone communications systems via satellite as soon as the Government gives the go-ahead. In the vanguard is AT&T which could have a full-scale, $170-million satellite system in orbit within three or four years. (*Management Rev.*, June 1961)

International travellers may be able to whisk through customs in a much shorter time in future. The International Chamber of Commerce with committees in 40 countries expects to hold a world conference on the subject in 1963 aimed at eliminating or modifying the more exasperating entry requirements. (*Dun's Rev.*, June 1961)

The hydrofoil, the "ship that flies", is presently attracting new interest in Canada and in many other countries. The hydrofoil, which is raised above the water on submerged wings, can travel about three times faster than conventional craft and is much more manoeuverable. Though the present research interest is centring on their use for commercial purposes, hydrofoil kits of fibreglass or aluminum are now available for pleasure boating at a price range of $200-$500. (*Can. Bus.*, June 1961)

Some of the new materials and methods that will be seen more of in the plant of the future are:

Reinforced shell concrete—curving surfaces which can stand amazing amounts of pressure no longer restrict architects to the conventional rectangular forms but permit greater use of artistic and sculptural forms.

Prefabricated buildings—can be adapted to any design, are easily altered for additions, and standardization of units makes these very economical.

Long span open web steel joints—make possible the elimination of supporting columns and save valuable working space.

Sculptural plywood components capable of 50-foot clear spans—thin sheets of plywood are glued to light lumber stiffened in a series of miniature troughs to produce lightweight floor and roof components.

Industrial doors, available for application at any traffic or temperature controlled area, are now engineered to suit specific building conditions and are designed to keep materials handling and maintenance at a minimum.

New flooring materials are corrosion proof. A popular type uses metal plates anchored into a concrete base by fasteners on the underside. Some are reinforced with metal chips for strength and to prevent skidding. (*Management Guide*, June 1961)

OF GENERAL INTEREST

World's biggest shipbuilding nation last year, for the fifth consecutive year, was Japan with 1,731,656 tons. This was 400,165 tons more than Britain, which maintained second place. West Germany was the third largest producer. Total world output was 2,020 ships launched amounting to 8,356,444 tons. (*Costing*, May-June 1961)

Per capita retail sales have increased much more rapidly in non-metropolitan than in metropolitan areas in the past 30 years, asserts an MSU economist. His conclusions are based on a study which shows that, although the population of Michigan metropolitan areas has increased 5% since 1929, retail sales have dropped 1% in the same period. Since suburban shopping centres are included in metropolitan areas in his census, he attributes gains in non-metropolitan areas to changes in relative income, a shift from the consumption of home-produced goods, growing sophistication of the non-metropolitan consumer, and congested driving and parking conditions in metropolitan areas. (*MSU News Services*)

Foreign ownership of Canadian manufacturing by 1958 was 51% and foreigners controlled 57% of all Canadian manufacturing operations. This has increased steadily since 1926 when foreign ownership was 38% and foreigners controlled 35% of manufacturing. (*Fin. Post*, June 3, 1961)

Professional conventions are increasingly becoming a marketing place for technical and management personnel. At one recent convention which broke all attendance records, attendance at actual meetings was lower than ever while conferees went job hunting in nearby hospitality suites. Though some efforts have been made to stem the practice, it seems little can be done about it as long as some companies persist and others continue to adopt defensive tactics. (*Personnel*, May-June 1961)

ON THE PERSONAL SIDE

Tension getting you? Here are some tips for taking the strain out of the busy executive's life, recommended by Bonnie Pruden, founder and president of the Institute for Physical Fitness:

- Take a deep breath every time you sit down.
- Lean back and stretch hard at least once every half hour.
- Shrug your shoulders every time you sign a letter, hang up the telephone or turn away from your desk.
- Bend down and try to touch your toes every time you get up from your chair.
- Place your hand on opposite sides of a doorway and push sideways every time you go through. (*Office Admin.*, May 1961)

People are hard to convince and slow to change their ways, judging by the report of a leading industrial designer which shows that 23 out of every 26 new products introduced on the market fail. Cases in point:

- Despite consumer surveys showing preference for wide-necked ketchup bottles, when such innovations were put on the shelves, housewives invariably rejected them for the conventional, narrow-necked type.
- When a new waterless headache pill was introduced, the product failed and had to be discontinued. Reason? Apparently consumers associated water with a cure and had no faith in such a radical new remedy. (*Industry*, June 1961)

EDUCATION—THE KEY TO SURVIVAL*

by Senator Donald Cameron,
Director, Banff School of Fine Arts
and Banff School of Advanced Management,
Banff, Alberta.

If democracy is to survive, this article warns, the Western nations must act now to match the tremendous industrial development presently taking place in Communist countries. The key to the industrialized world of the future is education, the author points out, and he compares the efforts of East and West in this field, both at home and in under-developed nations. A balance sheet of the positive and negative forces at work in the Canadian educational picture is drawn up and a course of action advocated for the future.

THERE is a great debate going on throughout the country about education and this is healthy and good. It is a sign that more people are concerned about education, about its aims, its quality, its results and its costs than ever before. As an evidence of this concern, and of governments' anxiety to do something about it, five Royal Commissions on education were established in Canada in the last 15 years. These were the Hope Commission in Ontario, one in Nova Scotia, and one each in Manitoba, Alberta and British Columbia. In the United States, Dr. James B. Conant completed two years ago a study of the American high school. The state of California completed the Larsen Report, a five-year examination of teachers' qualifications and of program content. At the adult level, the Carnegie Corporation and the Ford Foundation have sponsored two five-year studies on the content, quality and results of the programs in management training being conducted in the nation's business schools. In Canada, a joint committee of the Canadian Association for Adult Education and the Canadian Chamber of Commerce has initiated a study of the Canadian needs for management training and to see how well we are meeting them. In Great Britain, the Crowther Report on Education recently came off the press.

COMMON AREAS OF AGREEMENT

To any reasonable person reading all of these reports, and making allowances for the local or national differences in emphasis in the terms of reference, it is reassuring to note the broad general agreement between all of these reports on the common areas of weakness in the respective educational systems and the agreement that if we

* An address delivered at the 20th Annual Dinner of the Society of Industrial and Cost Accountants of Ontario which took place in Hamilton on May 6, 1961.

One of Canada's foremost educators, Senator Donald Cameron has been Director of the Banff School of Fine Arts since 1936 and the Banff School of Advanced Management since 1952, both affiliated with the University of Alberta. From 1936 to 1956, he was Director of the University of Alberta's Department of Extension. Holder of an M.Sc. degree from the University of Alberta and an LL.D. (Honoris Causa) from the University of British Columbia, he was a Carnegie Travelling Scholar in 1933 and has studied education methods in universities and schools in Great Britain, Scandinavia, Germany and France. Summoned to the Senate of Canada in 1955, he has served through the years as member and Director of numerous national Councils and Committees on education, the arts and sciences, and in 1958 acted as Chairman of Alberta's Royal Commission on Education.

are to cope effectively with the educational needs of today, we must take at least four basic steps:

1. Greatly raise the standard of qualifications required before a teacher is permitted to go into the classroom.
2. Pay salaries to the qualified teachers sufficiently high to make teaching competitive with other professional opportunities requiring comparable training, and to establish safeguards to encourage and maintain outstanding performance.
3. Greatly increase the depth of study in a basic core of essential subject matter at all school levels. This subject matter would include English language and literature, mathematics, science, the social studies of history, geography and civics and language instruction, particularly French.
4. To make greater provision in our schools to recognize and deal with the wide range of intellectual capacity within a given student sample and to devise methods of challenging those at all levels from the handicapped to the gifted.

There are, of course, many other areas of agreement among these various Commissions and Authorities, such as the need for encouragement of a greater measure of initiative in educational matters by giving Local Boards more autonomy once they have met minimum standards, prescribed by law, more attention to lengthening the school day and the school year, and extending the age of school leaving; more attention to a new educational institution, the Community College which combines vocational education and academic training and which in effect becomes a part-time educational institution in the sense that the training can be fitted in with an individual's employment.

The widespread agreement on these changes in our educational pattern is encouraging to all those who have given serious thought and study to the most important single community endeavour—the education of our youth.

The provision of an educational program which can effectively meet the needs of present-day conditions and those which will have to be met in the next 20 years is an almost frighteningly difficult task. It must concern itself not only with needs present and anticipated, but it must seek to perform its task on the basis of consent in an area where, in addition to the practical problems of developing a wide range of intellectual capacity to the fullest potential, one must be concerned with the emotional, religious and other prejudices which often prevent people doing what is reasonable and logical at a time and in a manner common-sense dictates it should be done.

It is rather unfortunate, and even pathetic, to see people waxing hot and furious over whether recommendations and the Commissioners who made them, must be labelled as being either "Progressivist" or "Traditionalist", whatever that may mean. And I am sure it means different things to different people. The important point is that education has become so important in terms of national welfare and the survival of a way of life, that we cannot afford to dissipate our energies in the witless attempt to classify one group of people as "Traditionalists" and therefore good, and another group as "Progressivists" and therefore bad. Let us admit at once that there are many good things in both traditional and in the so-called progressive education

and wise people will try to combine the best of both to make something richer than either.

To me, progressive education is that type of education which best fits the individual irrespective of his intellectual capacity, to most effectively meet his own and his community's needs at the time and the place in which he finds himself.

This definition has little to do with the dialectical fulminations of those who proclaim themselves as "Traditionalists" or "Essentialists", as opposed to those who espouse progressivism in the sense in which that term has come to be used in educational discussion.

WHERE WILL THE MONEY COME FROM?

We must persuade people that to provide the kind of education necessary, will be costly and will inevitably mean more taxes, or if not that, then a choice between a number of alternatives. Let us examine some of the choices we, as a people, could exercise. However, before we discuss these choices let us project our thinking ten years to 1970. By that time it will not be far off the mark to anticipate that our educational costs in Canada will be more than doubled. Instead of spending one billion dollars on education as we did last year, we shall be spending well over two billion a year. I suggest to you that we are not going to have much choice about that figure—not if Canada is going to hold her place among the society of nations. There will probably be four or five million more Canadians to share the added burden of costs, so it doesn't mean that the individual taxpayer's bill will be doubled, but his school tax could easily be increased 50 to 75 per cent. In this event, is this the time and the place where we start making choices from a number of alternatives and if so, what could these alternatives be?

Well, one way to get more money to pay more taxes while at the same time maintaining our ever-rising standard of living would be to produce more goods per unit of labor per hour or per day. This could be done by improving the efficiency of the present labor force, by the use of improved equipment, by the extension of automation, or by working longer rather than shorter hours—the latter a most unlikely prospect.

Another choice might be to spend less money on social or welfare services such as: unemployment insurance, hospital insurance, pensions, etc., and to divert the savings made to education. This might pay off but would not be very popular and would certainly be against the trend.

You may say, cut down on the cost of government—fire the bureaucrats and discharge those underworked and overpaid civil servants and use the money for education. Well, since the last Government was elected and after three years of hard work there are a few thousand more civil servants than there were, taxes have gone up and the budget hasn't come down, so that doesn't seem to be the answer. In that case, may we explore some other alternatives. These may offer more hope.

In 1958 Canadians spent approximately one billion dollars on education and in the same year according to D.B.S. figures we spent one billion, six hundred million dollars on alcoholic beverages, tobacco, motion pictures and cosmetics. In other words, by our free choice we spent $1.50 on these luxuries for every dollar we spent on education. In my own province of Alberta in that year we spent $57.5 million on education and $63 million on alcoholic beverages. A ten per cent reduction in

the liquor figure would have provided $6,301,000 more for education, or enough money to provide salaries of $8,000 a year for another 787 teachers.

The Canadian Teachers' Federation Research Department put similar figures another way when they said that in 1957 Canadians spent:

$ 60.00 per capita on education,
$ 89.00 per capita on liquor and tobacco,
$120.00 per capita on motor cars.

In placing these figures before you, I am not saying we should cut down the expenditures on liquor, tobacco, movies, cars and cosmetics, but I am suggesting that if we value education as much as we should, we still have some room in which to make choices in the use of our money. What we do will depend on what we value most.

It may seem far-fetched at this time and in this country to raise the question of a restriction on people's choice in the national interest—in other words, to consider whether or not the time may come when we may have to adopt a greater measure of compulsion with respect to education. We have already accepted the principle of compulsory school attendance to the age of 15 years. May we not equally well contemplate the extension of compulsory attendance in conjunction with compulsory employment or apprenticeship and schooling to 18 years? Fantastic you say. Well maybe, I say. I am simply posing choices which we are still free to accept in the western world. In fact, this is a time of choices for all of us who believe in the principles of democracy and freedom. For a long time we have gone on the assumption that we have all the time in the world to make the choices that are necessary—to obtain positive action by consent. It may come as a shock that many of the best informed opinions in the Anglo-Saxon world are beginning to have grave doubts that time is on our side.

THE SCIENTIFIC REVOLUTION

If you have not read it, may I commend to your attention a small booklet entitled *Two Cultures and the Scientific Revolution* by C. P. Snow. Sir Charles Snow is a brilliant scientist and a first-class novelist as well. He was in charge of Britain's scientific research recruitment during the last war.

Snow's thesis is that our two cultures—arts and science—in the English-speaking world have lost communication with each other and that this lack of co-operation and understanding between the scientist who has the future in his bones and the humanist, who sometimes acts as if the future didn't exist, represents a great limitation of our capabilities and a heavy loss to us all. He stresses that it is the traditional culture which in England failed to see the possibilities of the Industrial Revolution of 100 years ago and is failing even more significantly to understand the scientific revolution which has replaced the industrial revolution in our time. He says: "When the Industrial Revolution came to England almost none of the talent and energy went back into the revolution which was producing the wealth. Britain's young men were trained for administration, for the Indian Empire, for the purpose of perpetuating culture, but never in any circumstances to equip them to understand the revolution or to take part in it." "The intellectuals remained intellectual, the pure scientists shunned the commonplace challenge of putting industry and science to

work and went on with their dreams." Only a scientist of the first rank could make such a statement and get away with it.

Continuing, Snow says: "The Germans were quicker to develop the Industrial Revolution than we were". The proof of this is the way the Germans were able to recover so quickly and completely after the devastation of two world wars. The Russians began to understand the Industrial Revolution even before the end of the Czars. This was only natural because the Russian educational system of today is more closely patterned after the German than of any other country. The simple fact that these people grasped with such spectacular success is that industrialization is the only hope of the poor.

Snow believes the Scientific Revolution of today will change the world even more than the Industrial Revolution, and we are letting the Russians lead the way. Partly because for years their education has sought to reduce the gulf between art and science. As an example he says that: "Russian novelists are able to deal knowlingly with industrial and scientific themes and background, whereas an English novelist would know his readers wouldn't know what he was talking about. An engineer in a Soviet novel is as acceptable, so it seems, as a psychiatrist in an American one." He goes on to say that the Russians are doing more to advance science and engineering and industry than the rest of us. For every scientist and engineer England trains, the Americans train one and a half, and the Russians two and a half—and these figures are on a comparable per capita basis. The return on this investment is shown by the increase in national productivity. In Russia it has been increasing at a rate from seven to as high as nine per cent per year, while the best we have been able to do in America has been three to four per cent. These figures alone give point to the statement I made earlier that we haven't all the time in the world to make our choice as to what we are going to do.

Snow continues, and he is speaking more particularly of England when he says: "To say we have to educate ourselves or perish, is a little more melodramatic than the facts warrant. To say we have to educate ourselves or watch a steep decline in our life-time is about right." The problem of the entire western world today is that in the entire world there are rich and poor and that the poor, generally speaking, are not in the West and that Russia rather than the West is doing something about it. The only secret of the Russian and Chinese industrialization is that they have brought it off. That is what the Asians and Africans have noticed. It took the Russians 40 years, and it looks as if it will take the Chinese about half that time.

THE UNDER-DEVELOPED COUNTRIES

Technology is rather easy—for the task of industrializing a major country, as in China today, it only takes will to train enough scientists and engineers and technicians. Will, and quite a small number of years. Tradition and technical background seem to count for surprisingly little. There is no getting away from it. It is technically possible to carry out the Scientific Revolution in India, Africa, Southeast Asia, Latin America and the Middle East within thirty years. Since the gap between the rich countries and the poor can be removed, it will be. If we (in the Western World) are short-sighted, inept, incapable either of goodwill or enlightened self-interest, then it may be removed to the accompaniment of war and starvation, but removed it will be. The questions or the choices are—how and by whom?

The choice we still have in the Western World is: Are we prepared to invest the capital it will take to train many more thousands of scientists and technicians to the point where we can increase our own productivity? To the point where we have no poor of our own? Are we prepared to train the economists, social scientists, and the thinkers and philosophers who can devise the means of equitably distributing the abundance our society is capable of producing? And when we have done this for our own people are we prepared to train thousands more people to send to Asia, to Africa, to the Middle East and to South America to help those people raise their standard of living? If we don't, others will.

As an example of what Russia and Czechoslovakia are doing to train people in the under-developed countries, I am told that there are 30,000 technicians from Africa, and Asia, being trained in Czechoslovakia and Russia. I am also informed that some weeks ago, the Russian Minister of Education went into the Congo with large planes and one million dollars worth of scholarships and succeeded in recruiting 500 young Congolese to be trained in Russian schools. We are also told that the Russian Modern Languages Institute is training personnel in every African tribal dialect. How does our program compare with this as an effective instrument in the cold war? The best that can be said is that we have made a beginning—a good, modest beginning under the Colombo Plan, under the Commonwealth Scholarship plan, and there have been reports that this is going to be extended to non-Commonwealth countries. These moves are in the right direction, but so far the total effort of the countries of the Western World falls far short of the massive aid in the field of education being given by the Communist countries to the under-developed nations and this is the kind of aid that could be decisive in influencing long-range results.

Some of you may have seen on the television program "TABLOID" some time ago, the Labor Leader from Kenya—TOM MBOYA. Here was a man born 40 years ago in the mud hut of a sisal worker, who was educated in Mission Schools and received a Colonial Government Scholarship to go on and spend a year at Oxford. He spoke of the aspirations of his people in measured tones and with tolerance and understanding. Everyone who met Tom Mboya was tremendously impressed with him—with his sincerity, his tolerance, his conviction and his personality, and above all by his relentless determination. He spoke of his friendship with Kwame N. Krumah, the Prime Minister of Ghana, and of their dedication to the principle of equality for the black man in his own country. The other afternoon we had in our Gallery in the Senate the Minister of Labor from Trinidad, another black man. He too is educated and determined to seek for his people emancipation from hunger and disease and over-crowding. There are thousands more like these men—educated, to the everlasting credit of the British Colonial service, and dedicated to the proposition that what the Russians have done in raising the standard of living of their people —what the Chinese are now doing, and what the Indians are beginning to do, they can and will do too.

The determination of these people in every one of the so-called under-developed countries, to use the scientific revolution to raise the status and standard of living of their peoples is fascinating and almost frightening when set against the apathy, inertia and frivolity of our own people. To these people, just as it was to the Russians 40 years ago, and is today, education is the magic key which will open the door to a new world and they are determined to use it.

THE CANADIAN POSITION

Having examined the climate of the Scientific Revolution in the broad sense of its challenge to us, some assessment of our national balance sheet with respect to education may be in order:

1. On the positive side we live in one of the richest countries in the world. Our resources and our wealth potential as a nation are the envy of the world.
2. We have a people who have demonstrated a capacity for hard work under stress of national emergency such as during the War.
3. We live in a free society where each individual is free to work, worship, express himself and vote as he pleases.
4. We have a system of justice which is among the best in the world.
5. We have voluntarily provided a system of social security which assures everyone of food, clothing, shelter and medical care through sickness, disaster and unemployment.
6. We have compulsory free education for everyone up to 15 years of age, free high school education for those who wish to take advantage of it and a system of University education in which the state bears the major share of the cost.
7. We have a standard of living that is among the highest in the world.

The foregoing are some of the main positive factors or assets in our national balance sheet.

THE NEGATIVE FACTORS

The negative factors in the Canadian balance sheet as far as education is concerned have their roots in the community attitudes of our people, such as:

1. An increasing concern with social security—a belief that society owes the individual a living.
2. A lack of discrimination between what is good in literature, films, radio, television, and what is bad.
3. A standard of values which lays undue stress on material possessions as the symbol of success.
4. A lack of appreciation on the part of too large a proportion of the population of the importance and necessity of a high standard of educational achievement. This is characterized by an acceptance of sub-standard teachers who must inevitably turn out a sub-standard product.
5. The over pre-occupation with interests, needs and social adjustment in our educational system has led to a five-and-ten Woolworth type of education with a little something for everybody, but too little concern with fundamentals and substance.
6. The lack of emphasis on self-discipline and an over-concern with short-cuts and the easy way.
7. A lack of emphasis on scholarship and quality.
8. The debasing quality and lack of standards of much of the mass media programs in magazines, radio, films and television.

The foregoing are a few of the negative factors which tend to influence people in favor of what is mediocre and shoddy, rather than what is challenging and good. Robert M. Hutchins says it is the democratic dilemma that we believe that we must

educate everybody, while at the same time we seem to be convinced it can't be done. He says this accounts for the emphasis in our educational system as it has existed, on interests, needs and adjustment to the relative exclusion of emphasis on the broader meaning of life that comes from the study of literature, history and philosophy. Yet the object of education for all should be the same. The dull, as well as the bright, have the right to the development of their minds to the limit of their possibilities. This means that all students, regardless of their level of intellectual capacity should be offered a basic core of subject matter in English language, literature, mathematics, science and the social studies of history, geography and civics at a level and at a speed geared to the capacity of the individual. In other words, if democracy is to be effective and if it is to survive, everyone must have some understanding of the duties and responsibilities of citizenship, whether he is going to be a service station operator, a clerk, or a lawyer.

Hutchins goes on: "If education ever was important, it is important now. It seems useless to hope that democracy can survive unless all the people are educated for freedom. When oligarchies ruled the world, as they did until well into this century, only their education mattered. Since then the rule of the people has become a reality as we have moved into the most precarious of all periods in history. We are now equipped for the first time to erase humanity from the face of the earth. If every man is to be a ruler, everyone must have a ruler's education. Mass stupidity can now mean mass suicide."

Hutchins wrote this in 1955. I suspect he might modify some of his thinking if he were to re-write it today, but not his basic tenet that if democracy is to survive it can only do so on the basis of a highly literate and informed citizenship. The mechanic or the doctor, or the engineer, cannot be an effective citizen unless he has some acquaintance with the history of civilizations, with the best ideas and philosophy of the ages, and he must be able to relate these ideas to a knowledge of the scientific revolution of today.

The scientific revolution has given the "have not" peoples of the world the key to raise their standard of living and they will do so just as we have done, only they will do it in 20 to 30 years where we took over 100.

WHAT CAN WE CANADIANS DO ABOUT IT?

It is only useful to prepare a national balance sheet for education if we are prepared to accept the lessons that the balance sheet has to offer. I suggest to you that in specific and concrete terms, the stock-taking of Canadian education which has gone on in these last few years has these very practical and specific suggestions for us:

1. We are living in the most revolutionary period in world history in which the rate of change is far more rapid than in any previous age.
2. So-called under-developed and under-privileged countries have realized that the tools of the Scientific Revolution can be utilized to greatly raise their standard of living in a period of 25 years. They are determined to use those tools and to train their people to use them.
3. The Russians have already demonstrated that in a period of 30 years illiterate peasants can be trained to bring a nation from a state of technological illiteracy to the forefront of industrial power.

4. The incentive of a greater increase of material prosperity for all is the spur or the carrot which is leading the masses in the under-developed countries on. There is an almost universal will to achieve and there is no question they will be able to do, in a much shorter time than we, all of the things that have given us our material prosperity.

In contrast our people do not seem to have the same incentive.

We as Canadians have utilized the scientific revolution to gain one of the highest standards of living in the world. Our task now is to find the spur—the incentive to go beyond the achievements of the physical and natural adaptation of the scientific revolution and to combine, as C. P. Snow suggests, the two cultures of the arts and the sciences to give us not only material success and prosperity, but a spiritual, artistic and intellectual success as well. This should be our goal—how can we achieve it?

1. By emphasizing day in and day out, by the use of every means of communication, that education is the most important single activity that democratic people do together. It is the prime requisite to make democracy work. Without education and understanding, democracy cannot work and will inevitably fail as other government systems have failed in human history before.
2. The education required to make democracy work is not just any kind of education but is an education that disciplines the mind and enriches the spirit. It must put much more emphasis on a knowledge of history and literature and philosophy than anything we have had before. This is necessary to give people perspective and judgment, tolerance and understanding. In short, these are the subjects which must act as the catalyst between peoples and nations. Today we must understand and co-operate and live together or perish.
3. We must train our scientists thoroughly in mathematics and physics and chemistry and in the new science of electronics and power because these are the tools which enable us to maintain our present material success and go on to conquer new challenges in the future. But we must also train them in an appreciation of the arts and humanities.
4. We must train people who are bi-lingual and multi-lingual because we can no longer live in isolation from our fellow men, either physically, culturally or spiritually.
5. To provide this quality of education we must have teachers who are thoroughly and professionally trained. They must know a great deal more of philosophy, history, art, science, mathematics and language than they are required to teach. They must be carefully selected with emphasis on character, intellect and the ability to communicate.
6. They must be paid a salary commensurate with the training required and competitive with other professionally trained people. A system of rewards for outstanding performance must be part of our accepted responsibilities.
7. The teacher must have status in the community. He must be looked up to and have the respect of all. He must be looked upon as, and be qualified to be a spiritual and intellectual leader in his community.
8. To achieve the quality of education necessary and to insist on the quality

of teachers necessary to provide it, we must have School Boards and citizens who realize tthat education is the most important single task of democratic citizens. They must have a sense of values which is discriminating and selective—which knows the good from the bad, the shoddy and superficial from the solid and real.

9. Together, citizens, administrators, teachers and pupils must be given a new ideal for education. They must be impressed that it is only quality that will count and that to achieve quality and success, hard work, self-denial and discipline are necessary and vital.

If we do all these things with dedication, with energy, with imagination and skill, democracy may survive. If we are not prepared to do these things—democracy—the government of consent—will not survive. Hence a challenging high-quality of education adapted to the capacities of all our people is the KEY TO SURVIVAL.

For further reading

EDUCATION: AN INVESTMENT, NOT AN EXPENSE, Kurt R. Swinton, *Cost and Management*, Jan. 1961.

CANADIAN HIGHER EDUCATION UNDER STRAIN, George L. Court, *Canadian Chartered Accountant*, Dec. 1957.

THE CASE FOR BUSINESS CIVILIZATION, Maurice Baum, *Harvard Business Review*, Nov.-Dec. 1960.

THE CHALLENGE TO BUSINESS EDUCATION, A Symposium, *The Controller*, Jan. 1961.

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S.I.C.A. News

INCORPORATED 1920

OUR NEW PRESIDENT

WALTER W. B. DICK, B. Com., C.A., R.I.A.

Elected President of the Society of Industrial and Cost Accountants of Canada at the 40th Cost and Management Conference in Vancouver was Walter W. B. Dick, B.Com., C.A., R.I.A., of Moncton. Mr. Dick is a Partner of Hudson, McMackin & Company, Chartered Accountants.

A former President of the New Brunswick Society, Mr. Dick has held many offices in the national and provincial Societies and was instrumental in organizing both the Moncton and Fredericton Chapters several years ago.

He has been a Registered Member of the Society since 1950 and is also a member of several other professional associations including the Institute of Chartered Accountants in five provinces, the American Association of Hospital Accountants, the National Association of Accountants and the American Accounting Association. He is a former Governor of the Canadian Tax Foundation.

He attended public and collegiate schools in Brantford, Ontario, and graduated in commerce from Queen's University. He later spent a semester at the Graduate School of Business of Columbia University, where he studied money and banking.

Though most of his professional life has been devoted to public accounting, he has also found time for other activities. For some years he has been closely associated with the development and promotion of uniform hospital accounting in Canada and the United States. For the past ten years he has been Chairman of the Canadian Hospital Accounting Committee, the Committee responsible for the production of the definitive **Canadian Hospital Accounting Manual.** He has also acted as consultant on accounting matters to the Canadian Hospital Association and the Catholic Hospital Association of Canada and the United Sttes.

As a writer and lecturer on hospital and fund accounting, Mr. Dick has contributed

many articles to Canadian accounting journals and has lectured at Indiana University's summer sessions for hospital personnel. In his capacity of consultant to the Maritime Hospital Association, he has conducted popular Institutes on accounting and hospital administration for the past ten years.

If his hobbies seem to run to work and more work, it is interesting to note that Mr. Dick also enjoys reading—on accounting subjects. However, over the years, he has actively participated in organized sports such as lacrosse, basketball and football, in which he has also been involved in the team management. He is presently a member of the Moncton Golf and Country Club and the Moncton Curlers' Association, playing the game and acting in an executive capacity.

He attends St. John's United Church in Moncton. His wife is the former Jean Elizabeth O'Hanley and they have two sons, Bruce and Stuart.

At a time when S.I.C.A. is seeking to consolidate the great membership gains of recent years and to embark on a program of new technical excellence, we are fortunate in having a president of the proven calibre, energy and experience of Mr. Dick.

CHAPTERS AND MEMBERSHIP

Following is the list of graduates from six provincial Societies who received their R.I.A. certificates this year. There are 222 in all, an increase of 65 over last year.

This is one of the most significant increases since 1959 when Registered Membership increased to 151 from 71 the year before. At that time, the **S.I.C.A. Newsletter** of June 1959 predicted an annual increase in several years time of about 300 graduates per year, a prediction that, to judge by this year's figures, seems well on the way to fulfilment.

1960 - 1961 R.I.A. GRADUATES

The Society of Industrial and Cost Accountants of Alberta

William R. Abbey, Calgary
Conrad J. Aben, Calgary
Blair F. Barnes, Edmonton
Smirl F. Burgman, Calgary
P. S. Christensen, Edmonton
John E. Goudie, Calgary
Norman L. Granlien, Calgary
Samuel G. Hanna, Edmonton
Bruce W. Harris, Calgary
Ralph H. Johnson, Calgary
Williams S. Kot, Calgary
Howard J. Merryweather, Regina, Sask.
Gordon N. McAllister, Edmonton
Cecil F. Payne, Calgary
James S. Pinel, Calgary
Donald E. Reid, Calgary
William G. Rodden, Calgary
François S. Van Der Meulen, Calgary
F. A. Wilkins, Edmonton
David W. Wright, Calgary

The Society of Industrial and Cost Accountants of British Columbia

D. G. Allchurch, Vancouver
K. W. Broderick, Vancouver
Douglas C. Bryan, Abbotsford
Darell Campbell, Vancouver
John Connolly, Cranbrook
D. K. Dickson, Vancouver
R. B. Foerster, Richmond
H. Grammetbauer, Burnaby
J. Griffin, Victoria
V. H. Hildebrand, Vancouver
J. A. Hodson, Vancouver
E. D. Hoops, Grantham's Landing
H. H. Hunger, Port Moody
J. L. I'Anson, Victoria
Alfred R. Lockwood, Prince Rupert
W. L. Luney, Victoria
P. D. Murray-Allen, Richmond
D. G. McKillop, Vancouver
J. T. McMullan, Vancouver
L. A. Plewman, Kitimat
John Stashuk, Vancouver
R. Walker, Calgary, Alta.

The Society of Industrial and Cost Accountants of Manitoba

Dale F. Atkinson,
Robert P. Bayer, St. Boniface
Barry J. Condy, Winnipeg
Norman J. Cyr, Flin Flon
J. Ian Flatt, Winnipeg
Bernard A. Funk, St. Boniface
William G. Grant, Winnipeg
Earl P. Haggarty, Winnipeg
Gabriel E. Heyser, St. Vital
Arthur W. Janke, Winnipeg
Kenneth A. Kurbis, Selkirk
Thomas D. Mavins, Pierrefonds, P.Q.
Merlyn G. McCausland, Transcona
William A. McCracken, St. Boniface
Cyrille H. Ouimet, St. Norbert
Alexander Sinclair, Winnipeg
James R. Smith, Winnipeg
Kenneth Somerville, Winnipeg
Charles M. Sproule, Otterborn Hgts., P.Q.
A. George Stratton, Long Beach, Calif.
Thomas E. Walker, St. Vital
J. D. Watts, Winnipeg

The Society of Industrial and Cost Accountants of Nova Scotia

Francis B. Brackett, Walpole, Mass.
Armie A. Chiasson, New Waterford
Gerald A. Craig, Armdale
Clarence H. Ivey, Halifax
Miss Vida O. Large, Halifax
Armand J. Le Blanc, North Sydney
Gordon L. MacKay, Armdale
James A. McCarthy, Dartmouth
Thomas A. McDonald, Coxheath
Mrs. Jean C. McTague, New Glasgow
Otto M. Noftle, Prince's Lodge
John N. Roberts, Spryfield
Joseph O. Skerry, Spryfield
Carl W. Smith, Dartmouth
George H. Snow, Pictou
Charles M. Welsford, Dartmouth

The Society of Industrial and Cost Accountants of Ontario

William K. Addison, Oakville
James E. V. Albon, Port Dalhousie
Thomas A. Aman, Hamilton
Albert F. Amies, Guelph
Ronald W. E. Arnold, Montreal, P.Q.
James C. Barritt, Burlington
John Beveridge, Hamilton
Kenneth H. Boulter, Galt
Cecil R. Brown, Weston
George C. Cadman, Don Mills
John A. Calderwood, Ottawa
George R. Carson, Mimico
James A. Chalmers, Toronto
James E. Chapman, Don Mills
Keith G. Clement, Paris
James B. Cole, Scarborough
C. Louis Cooper, Hamilton
Kenneth A. Cumming, Guelph
John W. Curry, Welland
William D. Davidson, Don Mills
Robert E. Deane, Ancaster
Roy E. Dear, Niagara Falls
William J. Dennee, Kingston
Patrick E. T. Dennison, Scarborough
William T. Dillon, Sarnia
George D. Doresco, St. Catharines
Roy G. Everson, Ancaster
John Freund, Toronto
Douglas C. Fryer, Toronto
Mohamed Q. Gandhi, Pakistan
Stanley R. Globe, Grimsby
E. Ross Glover, Scarborough
John J. Godber, Toronto
Donald H. Goddard, Oakville
Kenneth R. Lavery, Dixie
C. Norman Lea, Fort William
Matthew F. Lefor, Amherstburg
Henry M. Ligas, Kitchener
James A. Lockhart, Collins Bay
C. Frank Martin, Kitchener
Alexander W. Mason, Sarnia
Raymond A. Melnick, Brockville
William F. Might, Weston
Arthur T. G. Moorhouse, Port Credit
John E. Mullen, Don Mills
Augustus Munoz, Toronto
William G. McAdam, Don Mills
Gordon A. McClean, Toronto
Donald W. McCulloch, Ottawa
Webster H. McFarland, Hamilton
John H. McFee, Toronto
Ronald A. J. Pigott, Hamilton
James C. Price, Windsor
Andrew Reindl, London
Charles D. Rizzo, Hamilton
George M. Roberts, Fort Erie
Irving L. Rosen, Toronto
Edward P. Ruscinski, Hamilton
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John Hanas, Toronto
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Peter T. Hewitt, Willowdale
Cornelis M. Hofmans, Strathroy
John H. Holman, Hamilton
Karel J. Hruska, Toronto
Harold G. Hubbell, Port Credit
Jack T. Hutchinson, Toronto
David Ibbotson, Trenton
Victor C. Ibbotson, Highland Creek
Morley A. Jamieson, Gananoque
Hywel G. Jenkins, St. Catharines
Wolf F. Katz, Fords, N.J.
James E. Kelly, Hamilton
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Roland J. Laliberte, LaSalle
Albert C. Laugharne, Toronto
J. George Smith, Kingston
Mrs. M. Irene Stewart, Ottawa
Lewis R. Stone, Peterborough
Peter G. Strecker, Toronto
N. Richard Summers, St. Catharines
Eugene P. Surowiak, Burlington
David B. Taylor, Ancaster
William B. Teasdale, Guelph
Howard G. Theurer, Scarborough
Ian M. Thomas, Ottawa
J. David Thompson, Don Mills
George P. Thomson, Peterborough
C. Clifford Tight, Sault Ste. Marie
John E. Uberig, Grimsby
Dorman G. Ulens, Ancaster
Gerard P. Vachon, Ottawa
Edward M. Watt, Hamilton
Karl F. Weckworth, Longlac
Norman E. Whinton, Hamilton
Jack M. Williams, Kitchener
Harold V. Wilson, Toronto
La Verne L. Wittich, Elmira
Edward L. Wood, Warren, Pa.
Wilfred J. Wright, Agincourt

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Brian S. Crowley, St. Lambert
Maurice P. Dorval, Quebec City
David E. Ellis, Chateauguay
Albert J. Ferrari, Montreal
Paul-H. Gagne, Sillery
Jean L. Garneau, Charlesbourg
James S. Hatzepetros, Montreal
J. Kenneth Higginson, Kilmar
Rudolf J. Hofmann, Montreal
C. R. Keen, Montreal
Claude Kirouac, Quebec City
Michel Lachance, Ste. Foy
Roger Letourneau, Charlesbourg
William A. Mitchell, Ste. Anne de Bellevue
Reginald Pollard, Montreal
John F. Riegert, Montreal
Guy Rivard, Quebec City
Robert B. Rochford, Montreal
Leonard St. Laurent, Quebec City
Sydney Z. Sevcik, Montreal
Ottokar Sykora, Montreal
Adrien Tardif, Lévis
Burton A. Tatoff, Montreal
Ferdinand Velgos, Montreal
Gerald F. Wood, St. Johns

PERSONALS

EARL H. ORSER, B.Com., C.A., has been appointed Treasurer of The Anthes-Imperial Company Limited, St. Catharines. A former General Member of the Toronto Chapter, he was previously a Partner of the accounting firm of Clarkson, Gordon & Co.

ROBERT J. A. TAYLOR has been appointed Assistant Secretary of A. B. Chance Company of Canada Ltd., Toronto. Mr. Taylor is a General Member of the Toronto Chapter.

HARRY S. WILSON, C.A., R.I.A., has been appoined Vice-President, Finance and Assistant Secretary of Atlas Steels Limited, Welland. In his new position, Mr. Wilson will be responsible for financial affairs and forward planning for the company.

DONALD R. YEOMANS, B.A.Sc., P. Eng., R.I.A., of Urwick, Currie Limited, Toronto, has been seconded for a year to the Royal Commission on Government Organization (Glassco Commission) as Project Director of the Research Group staff in Ottawa.

GEORGES LACHANCE, C.A., R.I.A., of the Quebec Chapter, has been promoted to Secretary of St. Lawrence Cement Co. Mr. Lachance was formerly Chief Accountant for Quebec.

A. L. HEGGIE, R.I.A., has been appointed Secretary-Manager of the Society of Industrial and Cost Accountants of Alberta in Calgary.

PUBLICATIONS AND TECHNICAL SERVICES

You, as a member of S.I.C.A., are invited to make manuscript contributions to **Cost and Management.** All papers received will be awarded points which gives you an opportunity of helping your chapter directly in the Inter-Chapter Competition.

However, the greatest benefits resulting from writing efforts go to the author himself. Once you have decided to start writing, you will find that an educational process will begin anew. In order to write meaningfully, you will need to draw on your experience and organize your knowledge in a logical manner. Once you have started to develop your subject, you will find that there are definite gaps that will need to be filled by research.

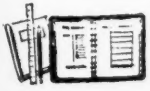
Although all articles submitted may not be chosen for publication, your editor hastens to assure you that there is room for several good papers by Canadian authors. S.I.C.A. has now reached a respectable age and can boast of many mature and knowledgeable members. You are urged to put your thoughts and experience on paper and share your valuable assets with other members through your journal **Cost and Management.**

CONFERENCES AND SEMINARS

With the National Conference in Vancouver now over, attention shifts to the 20th Annual Ontario Conference to be held at the Chateau Laurier in Ottawa on October 19 and 20, 1961. Plans are still in the early stages but an outline of the subjects that will be presented appears in this month's issue of the journal. The theme of the Conference is "Financial Aids for Management Decisions" and members will find this embraces many of the subjects that are exciting current interest in the accounting world.

Attention is also directed to the three executive development seminars that are coming up this Fall, two in Quebec and one in Nova Scotia. "Evaluation and Interpretation of Financial Reports for Non-Accountants" is being given for the first time at Dalhousie University in Halifax, as is "Evaluation of Profit Performance" at the Seigniory Club in Montebello, Quebec. "Financial Tools for Profit Control" is a repeat of the popular seminar held last year in Toronto and is being presented this year in the Eastern Townships, Quebec.

It is a little too early to present a full report of the 40th National Conference which has just taken place in Vancouver but complete information on this and the meeting of the Board of Directors will be given in the September issue of **Cost and Management.**



STUDENTS AND COURSES

EXAMINATIONS 1960

ACCOUNTING III

QUESTION 2 (28 marks)

The financial statements of Planet Ltd., and its subsidiary Satellite Ltd., for the year ended December 31, 1959, may be summarized as follows:

Statements of Profit and Loss
for the year ended December 31, 1959

	Planet	Satellite
Sales (including $26,000 at cost sold by Planet Ltd. to Satellite Ltd.)	$ 980,000	$ 230,000
Cost of Goods Sold (Note 1)	750,000	180,000
Gross Profit	230,000	50,000
Less: Operating Costs	180,000	30,000
	50,000	
Dividend from Satellite Ltd.	20,000	
Net Income	$ 70,000	$ 20,000

Statements of Retained Profits
for the year ended December 31, 1959

	Planet	Satellite
Balance, January 1, 1959 (Note 2)	$ 90,000	$ 30,000
Net Income for the year to December 31, 1959	70,000	20,000
	160,000	50,000
Dividends paid	50,000	25,000
Balance carried forward, December 31, 1959	$ 110,000	$ 25,000

Balance Sheets
as at December 31, 1959

	Planet	Satellite
ASSETS		
Current Assets		
Satellite Ltd.: Account Receivable (Note 3)	$ 16,000	
Other	114,000	$ 80,000
Investment in Satellite Ltd. at cost:		
12,000 shares	144,000	
Fixed Assets at cost less depreciation	500,000	141,000
	$ 774,000	$ 221,000
LIABILITIES		
Current Liabilities		
Planet Ltd.: Account Payable		$ 6,000
Other	$ 64,000	40,000
Capital Stock:		
Common Shares of $10 par, fully paid	600,000	150,000
Retained Earnings	110,000	25,000
	$ 774,000	$ 221,000

Note 1: All goods purchased and received by Satellite Ltd. from Planet Ltd. are included in the cost of goods sold. On December 31, 1959, however, $6,000 worth of goods ordered from Planet Ltd. were in transit. No entry has been made on the books of Satellite Ltd. for this shipment.

Note 2: Planet Ltd. acquired its holding in Satellite Ltd. on January 1, 1957, when the Retained Earnings of the latter were $10,000.

Note 3: On December 31, 1959, a $4,000 remittance from Satellite Ltd. is in transit to Planet Ltd. No entry has been made on the books of Planet Ltd. for this remittance.

REQUIRED:

Consolidated Statements of Profit and Loss and Retained Earnings and Consolidated Balance Sheet as at December 31, 1959.

SOLUTION 2

Planet Limited and Subsidiary Satellite Limited
Consolidated Balance Sheet as at December 31, 1959

ASSETS

Current Assets		
Cash	$ 4,000	
Goods in transit	6,000	
Other	194,000	$ 204,000
Fixed Assets—(At cost less depreciation)		641,000
Goodwill on Consolidation		16,000
		$ 861,000

LIABILITIES

Current Liabilities		$ 104,000
Minority Interest		35,000
Capital and Retained Earnings		
Capital Stock		
Authorized, issued and fully paid, 60,000 common shares of a par value of $10 per share	$ 600,000	
Retained Earnings	122,000	722,000
		$ 861,000

Planet Limited and Subsidiary Satellite Limited
Consolidated Statement of Profit and Loss
For the year ended December 31, 1959

Sales	$ 1,184,000
Cost of Goods Sold	904,000
Gross Profit	280,000
Operating Costs	210,000
	70,000
Less: Applicable to Minority Interest	4,000
Net Profit	$ 66,000

Planet Limited and Subsidiary Satellite Limited
Consolidated Statement of Retained Earnings
For the year ended December 31, 1959

Balance, January 1, 1959	$ 106,000
Add—Net Profit for the year	66,000
	172,000
Deduct—Dividends Paid on Common Shares	50,000
Balance, December 31, 1959	$ 122,000

ADVANCED COST ACCOUNTING - PAPER II

QUESTION 2 (10 marks)

The A.B. Company Ltd. has reported the following information for the years 1957 and 1958:

	1957	1958
Sales	$ 2,000,000	$ 2,200,000
Less cost of sales	1,000,000	1,500,000
Gross Trading Margin	1,000,000	700,000
Less operating expenses	600,000	200,000
Net Profit	$ 400,000	$ 500,000

During 1958 the company transferred depreciation of manufacturing equipment of $450,000 from operating expenses to cost of sales. Assume that the cost factors involved remain the same:

Case I. On the basis that the company is forecasting an increase in sales of $500,000 for 1959 as a result of an intensive sales campaign. This will involve hiring, on a salary basis, 6 additional salesmen at an annual salary of $8,000 each.

Case II. The alternative is the opening of a new sales distribution branch. It is estimated the branch office will increase the annual sales of the company by $450,000. Additional expense will include the renting of office space costing $3,000 per annum and the hiring of three additional personnel at a total cost of $20,000. The costs of operating the branch, other than the above, are estimated to be $5,000.

REQUIRED:

Which of the two cases should be chosen by management? Support your answer by the calculations which you consider necessary and indicate the advantage of one alternative as against the other.

SOLUTION 2

A.B. COMPANY LIMITED
Comparison of Proposed Alternatives
for the year 1959

	Case 1	Case 2
Sales ($2,200,000 + 500,000)	$ 2,700,000	
($2,200,000 + 450,000)		$ 2,650,000
Variable cost of sales (25% of sales)*	675,000	662,500
Depreciation on equipment	450,000	450,000
Other fixed costs of sales ($1,500,000—variable costs of 25% of 2,200,000, (i.e. 550,000)—depreciation on equipment of $450,000)	500,000	500,000
	1,625,000	1,612,500
Gross Margin	1,075,000	1,037,500
Operating expenses—		
basic for sales of $2,200,000	200,000	200,000
additional—salesmen (6 × 8,000)	48,000	
office rent		3,000
personnel		20,000
other expenses		5,000
	248,000	228,000
Net profit	$ 827,000	$ 809,500

*$\dfrac{1{,}500{,}000 - 450{,}000 - 1{,}000{,}000}{2{,}200{,}000 - 2{,}000{,}000} \times 100\% = 25\%$

Non-cost considerations:

1. In the long run a local branch office would probably produce more sales than a sales campaign.
2. A branch is less flexible insofar as changing or eliminating sales effort is concerned, but more flexible in providing service to local customers.
3. Opening a branch would involve transferring more control and clerical work out of head office. This could be good or bad, depending on many unknown factors.

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